

Creative destruction? Startups and divorce ^{*}

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Abstract: We argue for an organizational perspective on the relationship between professional and personal lives, proposing in particular that more stable organizations, those characterized by higher levels of bureaucracy, engender lower levels of marital instability among their employees. Consistent with this expectation, we find that startup employees have higher divorce rates compared to the employees of more established organizations. These results hold even when estimated using instrumental variables to account for selection into startup employment. But couple matching also matters. Couples in which both individuals work for startups – even if different ones – have some of the lowest levels of divorce.

Keywords: divorce, organizations, startups, bureaucracy, career alignment

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INTRODUCTION

Few would argue that organizations do not affect the personal lives of their employees. After all, the average adult spends more waking hours in the workplace than in any other setting. Anecdotal evidence and surveys alike suggest that organizational pressures and negative interactions with bosses and colleagues can create stress and dampen happiness and life satisfaction (e.g., Judge and Watanabe 1993; Kahneman et al. 2004; Dahl 2011; Colbert et al. 2016). Yet, despite the prevalence of these accounts, systematic research on the effect of employers on the personal lives of their employees remains limited.

What research has examined this relationship has largely considered the consequences of job characteristics, such as wages or the number of hours worked (e.g., Presser 2000; Killewald 2016). But even across jobs with ostensibly similar characteristics, employees have highly varied day-to-day experiences in the office depending on their interactions with colleagues and the nature of their employers (Barley and Kunda 2001). Organizations vary in their cultures, in their internal structures, in their employment models, and in the extent to which they offer supportive communities—all factors that shape the demands of jobs and the development of career paths.

To what extent do the demands of the workplace spill over into employees' personal lives? We focus on divorce as a harbinger of the more general negative consequences of a stressful work environment and explore the relationship between organizational stability and the marital stability of employees.

Young organizations, startups, have been seen as attractive employers, offering more interesting jobs, better opportunities for individuals to advance their careers, and more supportive social environments (Campbell 2013; Roach and Sauermann 2015; Kim 2018; Sorenson et al.

2019). One might therefore expect their employees to have higher levels of life satisfaction and lower divorce rates. But startups also differ from more established firms in ways that may have negative effects on their employees. Fledgling firms lack established roles and routines (Stinchcombe and March 1965). Employees must therefore navigate their jobs on a daily basis. Startups also frequently find themselves in financial duress and fail at high rates (Freeman et al. 1983; Yang and Aldrich 2017), meaning that their employees worry about the security of their employment, their income, and their personal finances (Roach and Sauermann 2010). These stresses may spill outside the organization into the home, elevating divorce rates.

Using Danish registry data, we explore empirically whether employees differ in their divorce rates as a function of the characteristics of their employers. Workers in entrepreneurial ventures have the highest hazards of divorce. The gales of creative destruction noted by Schumpeter appear not only to sweep away incumbent organizations but also to erode marital bonds. This effect, moreover, does not appear to stem from selection on who sorts into startup employment. But it does, interestingly, depend on the nature of the spouse's employment. Couples employed in similar sorts of organizations have lower divorce rates, even when both members of a couple have jobs in startups. Our results therefore suggest that the organizational instability of employers spills over to create marital instability among their employees but also that couple-level factors – whether expectations of what the job entails or a tolerance for uncertainty – moderate these effects.

DIVORCE: AN ORGANIZATIONAL LENS

Divorce itself represents a traumatic event. Experts usually rank it second only to the loss of a loved one in terms of the levels of stress that it induces (Miller and Rahe 1997). It also has long-

lasting consequences both for the (former) members of the couple and for their families (for a review, see Amato 2000). Divorced men and women, for example, rarely recover financially from the event (Smock et al. 1999; McManus and DiPrete 2001). Their children, moreover, suffer on numerous dimensions, from delayed cognitive development (Kim 2011) to their own marital instability as adults (Diekmann and Engelhardt 1999).

But divorce is not an exogenous event, unexpectedly intruding on the lives of some but not others. It rather represents the culmination of a complex set of stresses, some internal to the couple, others stemming from their environment (Vaughan 1986). A voluminous literature has examined the antecedents of divorce. Even a cursory review of it would require a paper-length treatment (for recent reviews, see Amato 2010; Lyngstad and Jalovaara 2010). The vast majority of these studies have focused on factors that one might see as characteristics of the individual or of the couple. Divorce rates, for example, first rise and then fall with time in marriage (Lyngstad and Jalovaara 2010; Kulu 2014); the presence of children appears to reduce the odds of divorce (Lyngstad and Jalovaara 2010); and individuals who themselves grew up in single-parent households experience higher rates of divorce (Diekmann and Engelhardt 1999).

But interest has also been growing in how the context surrounding the couple can influence their odds of divorce (Lyngstad 2011). Researchers, for example, have found that divorce rates rise with the availability of potential partners in the community (South and Lloyd 1995) and in the workplace (McKinnish 2004, 2007); that the connections between the division of labor and divorce depend on the institutional environment (Cooke 2006); and that the decision to discontinue marital relationships appears contagious (Aberg 2009), with separation spreading like the flu among connected couples.

Although a handful of these contextual studies have considered the effect of employment on

family life, they have almost uniformly focused on the characteristics of the job rather than of the organization. In other words, these jobs have been disembodied from the firms that created them. When women earn more, for example, divorce rates increase (e.g., Oppenheimer 1997; Özcan and Breen 2012; Killewald 2016). Jobs that have been perceived as more satisfying, meanwhile, have been found to reduce reported levels of tension in the relationship (e.g., Hughes et al. 1992). But people who perceive their jobs as interfering with their family life report higher levels of marital discord and dissolution (e.g., Matthews et al. 1996; Presser 2000; Schneider and Harknett 2019). Although these studies suggest that organizations contribute to differences in divorce rates, the evidence remains circumstantial as they have typically measured only individuals' attitudes towards their jobs rather than actual organizational characteristics.

What has been missing from prior contextual studies of the relationship between employment and marital stability has been an organizational perspective, an understanding that structural features of the firm influence the nature of the jobs that employees hold and of the environments that they experience. Much as Baron and Bielby (1980) argued for bringing the firm back into the study of stratification (see also, Barley and Kunda 2001), we would argue for a parallel introduction of the firm into the study of the work-family relationship.

The benefits of bureaucracy

Organizations differ on a variety of dimensions. One of the most widely-discussed structural features of organizations has been their degree of bureaucratization (Weber [1922] 1978; Bendix 1956; Blau and Schoenherr 1971), the extent to which roles, routines, and structures have emerged to coordinate the activities of the members of the organization. Bureaucratic authority exists on a continuum from on-the-fly problem-solving to tried-and-true routines.

The degree of bureaucratization depends strongly on two demographic characteristics of organizations: age and size (Sørensen 2007; Burton et al. 2017). Fledgling firms have low levels of bureaucracy, of formal structure (Stinchcombe and March 1965). At the start, organizations rarely have formal roles in place or routines for how to react to a range of situations. Startups develop these processes over time as they learn-by-doing (Aldrich and Yang 2014). As organizations age, through frequent repetition and pressure to conform to their environments, they establish rules that govern the activities and decisions of employees in their daily practice (Weber [1922] 1978; Schulz 1998).

Organizations also become more bureaucratic as they grow in size. Larger organizations have more differentiated jobs (Blau and Schoenherr 1971). This differentiation allows for greater specialization at the level of the individual employee. But it also increases the need for roles and routines to coordinate the activities of these functionally-interdependent employees (Blau 1970; Blau and Schoenherr 1971; Puranam 2018).

Perhaps the most extreme form of bureaucratization exists in public organizations, the collective bodies that enact and enforce the will of the state (Weber [1922] 1978). Not only are these public actors typically old and large but they face unusual levels of scrutiny, meaning that they must rationalize their actions (Meyer and Rowan 1977). As a result, public organization employment has been seen as unusually constraining. Özcan and Reichstein (2009), for example, found that tenure in the public sector dampened entrepreneurship rates far more than employment in large, private-sector organizations (cf. Sørensen 2007).

Bureaucracy has often been associated with negative attributes, ossification and stagnation (Merton [1949] 1968; Mintzberg 1979; Sørensen and Stuart 2000). But the reliability and accountability of organizations stem from these same structures (Hannan and Freeman 1984).

Employees within bureaucratic organizations enjoy stable expectations of what their jobs entail, clear career paths within the organization, and clearly-delineated relationships to their bosses, subordinates, and fellow employees (Weber [1922] 1978; Adler and Borys 1996; Sørensen 2007). In the absence of these stable roles and routines, employees must navigate their jobs and the politics within the firm on a day-to-day basis.¹

Although the stability of these jobs has sometimes been seen as stultifying, this stability also reduces the levels of stress associated with the job. Without clearly defined roles, fellow organizational members frequently develop different – and often inconsistent – expectations about what their colleagues should do (Kahn et al. 1964; Podolny and Baron 1997). This inconsistency and ambiguity imposes substantial stress on the occupants of these inchoate positions. As firms become more formal in their practices, however, they define jobs with more specificity, creating clear expectations for the occupants of those positions. That formalization, in turn, appears to mitigate the stress associated with role conflict and role ambiguity (Jackson and Schuler 1985; Abramis 1994; Tubre and Collins 2000).

More bureaucratic organizations also tend to produce more stable communities. Not only do bureaucratic organizations have more clearly specified expectations for the relationships between employees, but also they tend to have lower levels of turnover among their employees (Brown and Medoff 1989; Groothuis 1994). Large, bureaucratic organizations have several advantages in retaining employees, from simply providing more stable employment to offering internal career paths. Less turnover, in turn, means that employees have longer relationships with their colleagues, relationships more likely to become workplace friendships with shared understanding at the dyadic level and with positive emotional affect. It also means fewer temptations—those exposed to more potential partners have been found to have higher rates of divorce (McKinnish 2004, 2007).

Bureaucracy similarly reduces a third kind of stress associated with the workplace: worries about the loss of a job. As firms become more established and more reliable, they face a reduced risk of failure (Hannan and Freeman 1984; Freeman et al. 1983). But even leaving aside concerns about job loss due to the death of the firm, bureaucratic organizations adopt more formal practices for the firing of employees (Sørensen 2007). Individuals, therefore, need not worry as much about the day-to-day whims of their bosses. Because other potential employers often view firing as information about the individual (Gibbons and Katz 1991; Brand 2015), involuntary dismissal can prove particularly damaging and worrisome to employees.

Through several channels, then, bureaucracy reduces the stress associated with the job. We would expect that these effects would in turn reduce divorce rates because stress within the firm has a tendency to spill over to the family. Although people vary in their interest in and ability to separate their personal and professional lives (Rothbard et al. 2005), managing stress in one domain can introduce conflict or a general negative mood that affects the other (Judge and Watanabe 1993; Edwards and Rothbard 2000). Indeed, evidence has been found for relationships in both directions: Conflict in the workplace leading to problems at home and vice versa (e.g., Ilies et al. 2009; Sandberg et al. 2013). We therefore expect that those employed at more bureaucratic organizations will experience reduced rates of divorce.

The comforts of couple consistency

Although one member of a couple might initiate a separation (Sayer et al. 2011), to a large extent divorce represents a joint outcome. Perspectives that consider divorce simply as a function of the characteristics of the individual or of the context surrounding that individual therefore may miss important patterns in these paired outcomes.

Consider the interesting recent research of Oelberger (2019). In a qualitative study of 82 international aid workers, she found an important interaction between the value that spouses placed on the work of their partners and the strength of their relationships. When spouses did not share their partner's commitment to their jobs' missions, they often perceived the travel and long hours associated with international aid as burdensome. But when they did believe in the mission, the time away from home appeared, if anything, to strengthen their personal relationships. Far from being something specific to jobs with a social mission, however, we suspect that this issue of aligned values might operate quite broadly.

We define career alignment as consistency in the expectations of both members of a couple regarding job roles and careers.² Many of the expectations and demands of the modern workplace stem from the peculiarities of particular professions, industries, and organizations. Understanding them often requires deep experience with the setting. Few non-academics, for example, would fully appreciate the process of research, the stress of promotion, or the glacial decision times inherent in the sector. Among dual-earner couples, we therefore expect that those who employed by similar workplaces will understand better the organizational demands on their partners (e.g., Moen and Sweet 2002; Oelberger 2019).

Similarity in workplaces may also mean that the couple has more closely aligned values. To the extent that people have chosen their occupations and their employers, their choices probably depend in part on the values that they attach to various aspects of the job. Do they need to travel? Is overtime expected? Are they "on call"? Couples who have selected into similar sorts of organizations will therefore have more closely-aligned values regarding the nature of their jobs and its fit with their personal lives (Janning 2006; Ferguson et al. 2016). Whether due simply to understanding or also to shared values, these couples should experience less conflict in expectations between their personal and professional lives (Moen and Sweet 2002; Halbesleben et al.

2012). We would therefore expect these couples to have lower levels of divorce.

For couples employed by the same organizations, moreover, one might expect a particularly high degree of career alignment. Many job demands reflect idiosyncrasies of the organization. Having the same employer means that both members of the couple understand these expectations (Janning 2006). Being in the same organization, moreover, may also reduce the costs of coordinating family and work schedules (Moen and Sweet 2002). As a consequence, we expect that having the same employer will further reduce tensions in the relationship, increase social support, and decrease the odds of divorce.

DIVORCE IN DENMARK

We explore these questions in the context of Denmark, which allows us to use the detailed employer-employee data available from Statistics Denmark (the Integrated Database for Labor Market Research, most commonly referred to by its Danish acronym, IDA). We use a version of the database which includes records for every resident of the country from 1980 to 2012.

Roughly one in every two marriages in Denmark ends in divorce. Figure 1 depicts the ratio of the crude divorce rate – the number of divorces per person – to the crude marriage rate – the number of marriages per capita (multiplied by 100).³ Although this rate has been relatively stable, it does appear to rise somewhat over time.

[Figure 1 about here.]

Although these rates of marital dissolution may seem high, divorce in Denmark does not look markedly different than it does in other high-income European and North American countries. In 2012, for example, Denmark had a divorce-to-marriage ratio of 46 percent. By comparison,

the United States in that year also had a ratio of 46 percent; France had one of 54 percent; Germany, 40 percent; and the United Kingdom, 38 percent.

Denmark does, however, have one of the simplest and easiest processes for obtaining a divorce. Couples who agree to end their marriage need only pay a small processing fee to file for divorce. Even if initiated unilaterally, the individual interested in ending the marriage can do so with further restrictions at the end of a six-month separation period.⁴

In addition to having similar divorce rates, Denmark also appears to have a similar set of antecedents leading to divorce as one sees in the United States and other European countries. Rates of marital dissolution, for example, decline with education, income, age at time of marriage, and age similarity between the husband and wife (Svarer 2004).

Empirical strategy

Although the IDA data include records dating to 1980, we restrict our analysis to individuals between the ages of 15 and 55 and only include first marriages that occurred between January 1, 1991, and December 31, 2012. Because we want to ensure that we only analyze first marriages, we use the 1980 to 1990 data to determine whether these individuals have prior marriages.

Marital dissolution. Our outcome of interest is a binary variable indicating divorce. We have information on the date of any divorce specific to the day. This variable therefore has a value of 0 up until the day of a divorce and then shifts to 1 in the event of a divorce. We treat marriages that have not ended by December 31, 2012, and those in which a member of the couple dies before divorce as censored cases. Once an individual or a couple dissolves a marriage, they leave our analysis (as we analyze only first marriages).

Because we have at most one event per individual (or couple), we estimate single-event hazard models. In particular, except where stated otherwise, we estimate semi-parametric, piece-wise exponential hazard models of the continuous rate of divorce. Although most of the data update on an annual basis, we nevertheless use the number of days from the time of marriage as the clock and split annual spells where appropriate to update time-varying variables.

To allow for an extremely flexible baseline relationship between the rate of the divorce and time in marriage, we include time pieces in our models for each year that has elapsed (i.e. the cut-points correspond to years of marriage).

Employer type. Per our discussion above of the relationship between employer age, size, and degree of bureaucratization, employer type serves as our primary variable of interest. We conceptualize employer type in terms of the joint age and size of the employer (e.g., Sorenson et al. 2019), splitting employers into five categories (in order of their expected average degree of bureaucratization): (1) small, young organizations (those with fewer than 50 employees that have been operating for no more than 4 years), (2) large, young organizations (those with 50 or more employees that have been operating for no more than 4 years), (3) small, old organizations (those with fewer than 50 employees that have been operating for more than 4 years), and (4) large, old organizations (those with 50 or more employees that have been operating for more than 4 years), and (5) the public sector.

We chose 4 years as the dividing line between young and old because that represents the half-life of an organization in Denmark. Splitting small and large at 50 employers represented a somewhat more arbitrary choice but that threshold creates a fairly even split by size, with a little more than 40 percent of the population working in small firms in any given year.⁵

Control variables. Although a large number of factors have been found to correlate with divorce rates, our purpose here is not to predict divorce but rather to determine whether and why divorce rates might depend on characteristics of the workplace. In adjusting for factors other than employer type, we therefore focus on those that might influence both divorce rates and selection into employers of particular types (as only those factors related to both could potentially confound our results).

One such factor is unemployment. Past research has found strong connections between spells of unemployment and startup employment (Nystrom and Elvung 2014; Burton et al. 2017) and between unemployment and divorce (Attewell 1999; Kalil et al. 2010). We therefore adjust for unemployment to ensure that something about unemployed individuals does not account for any relationship between startup employment and divorce rates. Although our data do not include information on unemployment per se, we do have information on being out of the labor force and include it as a time-varying indicator variable in our models.

The models also adjust for a number of other individual-level characteristics. Entrepreneurs, for example, may have particularly high divorce rates due to the stress associated with the position (Dahl et al. 2010). We therefore included an indicator variable for founders, defined as all those employed at a firm in its first year of operations. This variable remains on even if the firm becomes large or old, as long as these employees remain at the firm. We also adjusted for gender, years of age, education, number of children (0, 1 – 2, 3+), and (logged) individual income.⁶

To account for factors surrounding divorce rates that may change at a societal level, including norms and the strength of the economy, all of our models include a vector of indicator variables for the calendar year.

Table 1 reports descriptive statistics for these variables both for the full sample and within the various types of employers. These statistics essentially describe yearly averages. Hence, for example, about 2 percent of married individuals get divorced each year and 6.6 percent of employees in small, young firms lose their jobs each year as a consequence of firm failure.

One can immediately see that divorce rates vary across organizational types, with those employed by young firms, whether small or large, having the highest divorce rates, and those employed in the public sector having the lowest rates. But these firms and their employees also differ on a number of other dimensions. Employees at older firms, for example, spend more time at these employers and experience less turnover among their coworkers. Older firms also fail at lower rates. We therefore turn to a multivariate analysis to determine whether these average rates simply reflect compositional differences in their employees and what factor might mediate any relationship between bureaucratization and divorce rates.

[Table 1 about here.]

Individual-level analyses

Table 2 reports the results of our initial set of analyses, estimating divorce rates at the level of the individual. Rather than reporting the coefficients for the time pieces, Figure 2 plots the implied baseline hazard of divorce based on these coefficients for Model 1 (this baseline, however, remains quite stable across specifications). The hazard of divorce begins low, the “honeymoon” period, but then rises rapidly for roughly five years before it begins to decline again (note that our observation window includes a maximum of 20 years so we cannot estimate the baseline rate past 20 years). Interestingly, this pattern appears consistent with the folk wisdom of the “seven-year itch” (for similar results from Finland, see Kulu 2014).

[Figure 2 about here.]

[Table 2 about here.]

Turning to the effects of interest, Model 1 adjusts only for the baseline hazard of divorce and for the calendar year.⁷ Large, old employers serve as the reference category. Before adjusting for individual-level characteristics, the average divorce rates associated with each employer type appears roughly in line with its average expected level of bureaucratization. The employees of small, young firms have the highest divorce rates, followed by those of large, young firms. Older firms, whether small or large, appear similar in the divorce rates of their employees. Employees in the public sector, meanwhile, have the lowest hazards of divorce.

But startups and more established firms employ different sorts of individuals (Ouimet and Zarutskie 2014; Burton et al. 2017). Model 2 therefore introduces controls for individual-level characteristics. The effects of these controls generally appear in the expected directions, with more educated individuals, those with children, and those who married at a later age having

lower odds of marital dissolution. The indicator variable for founders nevertheless suggesting the opposite relationship from our expectation. Founders have lower rates of divorce than employees who join these firms later.

Before discussing the primary variable of interest, employer type, let us note two things regarding these control variables. First, they have highly stable effects across the models. We therefore suppress the reporting of the coefficients for these variables in subsequent tables (even though they have been included in all of our analyses). Second, their inclusion does not change much the estimated effects of employer types. Selection on these factors, in terms of who sorts into employers of particular types, does not appear to account for differences in divorce rates.

After adjusting for these factors, the differences across employer categories become even more pronounced. The employees of startups have substantially higher divorce rates than the employees of other employers. For example, the employees of small, young firms have roughly 15 percent higher rates of divorce than the employees of large old firms. Two results, however, appear slightly out of line with our expectations. The employees of small, old firms have somewhat lower rates of divorce, about 2 percent, than those of large, old firms. Public sector employees, moreover, exhibit somewhat higher rates of divorce than the employees of large, old firms after adjusting for individual-level characteristics. We discuss this issue further below.

The next pair of models splits the analysis by gender to see whether men and women differ in their relationships between employer type and divorce rates. Interestingly, women employed in large, young firms have higher divorce rates than men but only women employed by small, old organizations have lower divorce rates. Public sector employment, meanwhile, has opposite effects for men and women—relative to large, old firm employment, it appears associated with higher divorce rates for men but lower divorce rates for women.

The final pair of models meanwhile splits the analysis by parenthood status. The most notable differences here pertain to divorce rates for the employees of startups, which appear particularly elevated for those individuals who have children. Public sector employment, meanwhile, appears associated with lower divorce rates only for those individuals who have not (yet) had children. In fact, these employees have higher divorce rates after having children. Perhaps the inflexibility of these environments becomes more problematic as parents must deal with managing the care of their children.

Exploring mechanisms. To explore better the mechanisms underlying this effect, we attempt to parameterize some of the differences between more and less bureaucratic firms. *Firm turnover* measures the percentage of employees at the firm in year $t - 1$ that remained employed at the firm in year t . It ranges from 0 (for no turnover) to 100 (complete turnover).⁸ We also included a variable to capture firm failure. *Firm fails* turns to 1 if an individual loses their job in the same year that the firm itself fails.

[Table 3 about here.]

Table 3 reports the results including these variables. As noted above, these models include all of the controls that appeared in the previous table though their coefficients have not been reported. Although employee turnover appears positively associated with the hazards of divorce, the effect sizes appear relatively modest and the inclusion of this variable has little effect on the estimated coefficients for employer types. Stability of colleagues matters but it does not appear to be a particularly important channel through which bureaucracy influences divorce rates.

Being employed at a firm that fails, meanwhile, appears associated with elevated levels of divorce. Once again, however, this effect does not appear to account for much of the effect of bu-

reaucracy on divorce. The employer categories remain strong predictors of divorce rates even accounting for these features of organizations.

Accounting for selection

Although we adjust for a number of demographic factors and although these adjustments have relatively little influence on the estimated results, one might still worry that individuals sort into types of employers for reasons that might also relate to their odds of getting divorced. For example, perhaps those who join startups have a taste for variety or have relatively-easy-to-observe characteristics that relate both to their desirability as employees and as spouses.

The list of such potential confounds seems long and our data do not include any information on many of them. We have therefore adopted an indirect approach to determining the robustness of these effects. We estimate the effects using instrumental variables.

Our instruments stem from using the local job opportunities in organizations of particular types as predictors of where individuals end up being employed. Even if employers might prefer another type of employer, the availability of jobs constrains their ability to act on those preferences and therefore should provide a valid predictor of employer type.

These instruments should also meet the exclusion restriction. Although growth or decline in the local economy might add or relieve stress on a marriage, our instruments stem from the *proportion* of jobs in each category rather than from the levels of these jobs. Except for the effects that these opportunities have on what types of jobs individuals have, we therefore see little reason to expect the aggregate demography of employers in a region to influence divorce through other channels (see also Harknett and Kuperberg 2011).

We created the instrumental variables using a population-level dataset, including *all* employees in each region. Each instrument calculates – within a particular region, industry, and year – the proportion of the flow of individuals being hired that went into an employer of a specific type. We therefore have a total of four instruments, one for each type of potential employer.⁹ We apply this instrument to each individual based on the year in which that person last changed jobs, based on the region in which they lived at the time, and based on the industry in which they worked.

Because the development of methods for implementing instrumental variables in the context of censored dependent variables remains at an early stage, our IV estimation shifts to using linear probability models to estimate the likelihood of divorce (Dahl and Sorenson 2012). To scale the coefficients in the second stages, moreover, our models divide the predicted values from the first stage by 100. One therefore cannot readily compare the magnitude of the coefficients in the instrumented models to those in the earlier tables.

Tables 4 and 5 report the results of the IV regressions for husbands and wives respectively.¹⁰ In each table, the first four columns detail the estimates from the first-stage models, the fifth column then reports the second-stage model in which we used instruments for small young, large young, small old, and public employer types. As noted above, one cannot easily compare these magnitudes to those in the earlier models. For comparison, the final column, therefore, estimates a linear probability model in which we do not instrument for employer type.

[Table 4 about here.]

[Table 5 about here.]

The first stages reveal a strong relationship between the proportion of jobs available in a particular type of employer and the probability that an individual ends up in an employer of that

type. Note that each endogenous variable primarily loads on its associated instrument. The Kleibergen-Paap (KP) F-statistics provide a formal test of whether each first stage has sufficiently strong instruments to eliminate at least 95 percent of the bias in the naïve linear regression. For our models, the KP F-statistic has a critical value around 17 (Stock and Yogo 2005). Our F-statistics exceed this threshold by several orders of magnitude.

The second-stage results interestingly show even stronger relationships between employer type and divorce. The instrumented models have coefficients two to three times as large as those found in the non-instrumented models (the right-most column). One possible explanation for the larger effect size is that the instrument removes the downward bias associated with measurement error. But keep in mind that the IV regression provides an average causal effect for those most affected by differences in the opportunity structure. The average individual in the IV model therefore may represent someone who had been looking for a different type of employer. If so, it would suggest that the matching of employee preferences to employer types mitigates the potential stress associated with working for a startup and its concomitant effects on divorce rates. However, even after accounting for the propensities of individuals to sort into different types of organizations, young ventures (small young and large young organizations) function as hotbeds of divorce.

Couple-level analyses

As noted in the theory section, the relationship between organizational contexts and divorce may depend also on whether both members of the couple have similar employers. To examine this possibility directly, we constructed a couple-level dataset (effectively cutting the sample size in half). These models parallel those at the individual level (i.e. they have the same controls

for the husbands' and wives' individual-level characteristics as found in the individual-level models).

Table 6 characterizes the extent to which couples match in their employer types. Matching between certain types of employers appears quite high. For example, out of the individuals employed in entrepreneurial ventures roughly 1 in 10 has a spouse also employed by a startup, a rate far higher than one would expect by chance.

[Table 6 about here.]

Table 7 estimates the importance of this matching to the likelihood of divorce. The first model includes a single variable for whether both members of the couple work for the same employer. Those that do have much lower divorce rates than couples where the individuals have different employers. The second model relaxes the matching of employers to being those of the same type (though not necessarily the same firm). Once again, the indicator variable for a match reveals that couples that match in terms of being employed as similar types of organizations enjoy reduced rates of divorce. The third model includes both variables, demonstrating that the effect of same employer type does stem simply from the cases of couples who have the same employer.

[Table 7 about here.]

The next two models explore whether matching on some types of employers have different effects from matching on others. Matching appears important primarily for those individuals who work for small firms, whether young or old. Interestingly, while individuals employed by small, young firms have some of the highest average rates of divorce, when *both* members of the couple work at small, young firms they have some of the lowest rates of divorce. These results hold even if we instrument for both employer type and for couple-level matching using

the same instruments as above (and their interactions to predict matching).

One might find it tempting to interpret these results as evidence in favor of changing norms since the models suggest that dual-career couples have lower rates of divorce than couples with a single earner. We would nevertheless urge caution on that interpretation for two reasons. We have not attempted to parameterize the relative earnings or the relative importance of husbands' versus wives' careers. These dual-earner couples may still have heavily-gendered roles within the household. Indeed, we suspect that the relative importance of organizational membership in the individual career trajectories rather creates a contemporary version of what Papanek labeled as the "two-person single career" (Papanek 1973). Although this term originally mean that the wife would work at home to support the husband's career, the current version may involve the women being "under employed" so that the man has more freedom to pursue his career.

DISCUSSION

We used Danish data to examine how the types of organizations in which individuals worked might influence their probability of getting divorced. Workers in entrepreneurial ventures, particularly small ones, have the highest hazards of divorce. Those results hold even in models that adjust for a number of individual-level characteristics and in models estimated using instrumental variables to account for the selection of individuals into particular types of firms. It also holds even when accounting for the higher propensity of these young firms to fail, leading to job loss for their employees.

Overall, this pattern of effects appears consistent with the idea that low levels of bureaucra-

zation – that is, the absence of well-defined roles and routines for operating – create stressful workplaces. Although bureaucratization has been criticized as the enemy of innovation, it nevertheless brings stability to organizations, allowing employees to understand better their roles and responsibilities (Hannan and Freeman 1984; Adler and Borys 1996; Sørensen 2007).

We also found that couple consistency mattered. Couples who both worked for the same employer or even the same type of employer had reduced rates of divorce. That pattern held even for the employees of startups. In fact, having similar sorts of employers appeared even more important to couples in these turbulent environments. Couple-level matching on employer type may mean that couples can better understand and support their spouses in response to workplace stress because they understand and empathize with the situation.

The importance of couple consistency suggests new ground for the broader research stream on marriage and family. Although a number of existing studies have begun to document that job characteristics can matter in different ways for husbands and wives (Chiappori et al. 2017), our results suggests that synchronicity also matter. In other words, even among men and women, the effects of these characteristics and of workplaces may depend on where their spouses work and on the characteristics of their spouses' jobs.

The one result that does not appear in line with our expectations is that husbands (though not wives) who work in the public sector have higher rates of divorce than those who work in large, established organizations, and when both members of the couple work for the public sector that elevates divorce rates. Although these employers are among the most stable and bureaucratic possible, employment in them may create marital tension for other reasons. They pay less, have fewer opportunities for advancement, and have a much smaller gender wage gap, factors which may cause stress for husbands who feel that they should play the traditional role of being the

breadwinner (Pierce et al. 2013; Bertrand et al. 2015; Killewald 2016).

Overall, the results point to the utility of adopting an organizational perspective on the work-life question. Even net of job characteristics, such as income, the nature of the work environment has important consequences for divorce, presumably because these events reflect underlying differences in the stressfulness of being employed in these environments. Firm age and size, however, represent only some of the most basic distinctions across organizations and they only proxy for bureaucratization, we therefore see ample opportunities for future research on the relationship between organizational design and organizational characteristics on employees' personal lives.

These results may also have relevance to societal level trends. Although our focus has been on individuals and couples, the demography of employers has been shifting in many countries, from large, stable manufacturing firms to smaller, younger, and more dynamic manufacturing and service firms. In these individual-level effects aggregate up to the societal level, this shift in the demography of employers may in part account for the rising divorce rates in Denmark, the United States, and many other modern economies.

Although our motivation for studying this question has been to understand better the relationship between employment contexts and family life, these results also shed light on a debate about what startups pay. Startups appear to pay their employees less than they would earn at larger, more established firms (Burton et al. 2017; Sorenson et al. 2019). One interpretation of that penalty has been that it represents a “compensating differential”—in other words, perhaps employees accept lower wages at these firms because they derive greater satisfaction from working at them. But the fact that employment at these startups simultaneously raises divorce rates suggests that the stress associated with these organizational environments may outweigh

any psychological benefits associated with being in a more dynamic environment. Our results therefore contribute to the growing literature on the “dark side” of entrepreneurship.

Far from being purely externalities for employers, our results also have implications for organizations. Although our focus has been on the effects of organizations on employees, the personal lives of employees almost certainly affect their productivity. The fact that startups create more stress for their employees may therefore create another channel for the liability of newness, in which young organizations find it difficult to get the most possible out of their employees because they cannot offer them a stable work environment.

Notes

¹Bureaucracy does not eliminate office politics by any means but it does provide a set of rules for the game, reducing the range of issues subject to negotiation.

²We see this definition as being consistent with the life-course fit perspective on work and family (Moen 2011).

³This simple ratio slightly overstates the probability of a specific marriage ending in divorce because marriage rates in Denmark have been declining and therefore the stock of marriages exceeds what one would project simply by extrapolating from the current per capita rate.

⁴In cases of adultery and domestic violence, the law allows for immediate unilateral divorce.

⁵We went to great lengths to ensure that the ages and sizes represent the ages and sizes of the organization rather than of an establishment. We excluded firms owned by other companies and cases of companies in which more than 30 percent of the employees had been employed together in another firm in the previous year (as these may represent spin-offs rather than startups).

⁶Although we use labels to indicate the approximate levels of education, the underlying variable actually measures years of education: less than 12 years, 12-15 years, 15-17 years, more than 17 years.

⁷The models also include an unreported control variable for the small number of employers which we could not classify in one of the five categories. In general, these individuals did not differ in their divorce rates from those of the reference group, the employees of large, old firm.

⁸To avoid confounding turnover with firm failure, the turnover variable has a score of zero in the final year of the a firm's operations.

⁹Note that we do not need to instrument for the reference category: large, old organizations. Before running models, we visually assessed whether the instrumental variables fulfill the monotonicity condition and reliably push individuals into opting into that specific employer type (results available upon request). These figures revealed that at higher values of the instruments, the proportion of individuals in the corresponding employer category also went up.

¹⁰Note that the number of individuals in these separate analyses can differ because our results include same-sex marriages.

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Table 1: Descriptive statistics (means and standard deviations) at person-year level

	Full sample	Small, young	Large, young	Small, old	Large, old	Public
Divorce	0.019 (0.138)	0.020 (0.140)	0.019 (0.137)	0.018 (0.133)	0.018 (0.134)	0.017 (0.130)
Employee tenure	3.243 (3.885)	2.039 (1.205)	2.216 (1.275)	5.309 (4.601)	5.161 (4.521)	3.666 (3.477)
Firm turnover	21.040 (26.595)	31.984 (33.854)	30.444 (29.148)	26.680 (27.901)	25.801 (25.341)	24.689 (25.022)
Firm fails	0.045 (0.207)	0.066 (0.249)	0.048 (0.214)	0.034 (0.182)	0.029 (0.169)	0.101 (0.301)
Founder	0.117 (0.321)	0.648 (0.478)	0.693 (0.461)	0.178 (0.383)	0.083 (0.276)	0.000 (0.000)
Age	36.489 (6.934)	35.818 (6.583)	37.170 (6.705)	36.965 (6.806)	36.863 (6.619)	37.163 (6.863)
Income (logged)	10.870 (4.135)	10.865 (4.025)	12.632 (0.740)	11.765 (2.930)	12.632 (0.722)	12.345 (0.757)
Education						
Primary school	0.179 (0.383)	0.176 (0.380)	0.154 (0.361)	0.175 (0.380)	0.163 (0.369)	0.133 (0.339)
High-school/ gymnasium	0.508 (0.500)	0.601 (0.490)	0.523 (0.499)	0.632 (0.482)	0.550 (0.498)	0.409 (0.492)
College	0.182 (0.386)	0.118 (0.323)	0.152 (0.359)	0.108 (0.311)	0.158 (0.365)	0.289 (0.453)
University	0.110 (0.312)	0.082 (0.275)	0.154 (0.361)	0.067 (0.250)	0.115 (0.319)	0.161 (0.368)
Children						
None	0.208 (0.406)	0.216 (0.411)	0.206 (0.404)	0.197 (0.398)	0.206 (0.404)	0.185 (0.388)
1-2	0.653 (0.476)	0.646 (0.478)	0.670 (0.470)	0.663 (0.473)	0.677 (0.467)	0.667 (0.471)
3+	0.139 (0.346)	0.137 (0.344)	0.124 (0.330)	0.139 (0.346)	0.116 (0.320)	0.147 (0.354)
Person-years	10,000,154	621,692	525,681	1,426,461	1,729,570	2,450,337

Table 2: Estimates of divorce hazards by type of employer

	1	2	3	4	5	6
	All	All	Husband	Wife	No children	Children
Large, old (ref.)						
Small, young	1.090*** (0.012)	1.153*** (0.014)	1.131*** (0.017)	1.162*** (0.022)	1.135*** (0.019)	1.136*** (0.019)
Large, young	1.039*** (0.012)	1.128*** (0.014)	1.062*** (0.018)	1.180*** (0.024)	1.023 (0.019)	1.214*** (0.021)
Small, old	0.988 (0.008)	0.978** (0.008)	1.014 (0.011)	0.925*** (0.013)	1.021 (0.012)	0.934*** (0.011)
Public	0.944*** (0.007)	1.031*** (0.008)	1.049*** (0.012)	0.952*** (0.010)	0.784*** (0.009)	1.231*** (0.012)
Out of the workforce	1.293*** (0.009)	1.235*** (0.011)	1.273*** (0.015)	1.116*** (0.014)	1.137*** (0.014)	1.307*** (0.016)
Founder		0.875*** (0.009)	0.934*** (0.011)	0.825*** (0.014)	0.977 (0.014)	0.811*** (0.011)
Age		0.974*** (0.000)	0.973*** (0.001)	0.975*** (0.001)	0.970*** (0.000)	0.976*** (0.001)
Income (logged)		1.009*** (0.001)	1.013*** (0.001)	1.006*** (0.001)	1.020*** (0.001)	1.002* (0.001)
Primary school (ref.)						
High-school/ gymnasium		0.778*** (0.004)	0.853*** (0.007)	0.714*** (0.006)	0.895*** (0.007)	0.702*** (0.005)
College		0.604*** (0.005)	0.684*** (0.008)	0.538*** (0.006)	0.724*** (0.009)	0.525*** (0.005)
University		0.498*** (0.005)	0.558*** (0.008)	0.457*** (0.006)	0.674*** (0.010)	0.399*** (0.005)
None (ref.)						
Children: 1-2		0.236*** (0.001)	0.114*** (0.001)	0.547*** (0.004)		
Children: 3+		0.150*** (0.001)	0.064*** (0.001)	0.378*** (0.005)		
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
AIC	1,196,398	1,090,979	483,778	582,041	377,118	709,419
Persons	976,282	976,282	487,972	488,310	609,964	850,905
Person-years	10,000,154	10,000,154	4,999,308	5,000,846	2,079,519	7,915,475

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests).

Table 3: Estimates of divorce prevalence by turnover and firm failure

	1	2	3
Firm turnover	1.001*** (0.000)		1.001*** (0.000)
Firm fails		1.052*** (0.012)	1.092*** (0.013)
Large, old (ref.)			
Small, young	1.144*** (0.013)	1.150*** (0.014)	1.139*** (0.013)
Large, young	1.122*** (0.014)	1.127*** (0.014)	1.118*** (0.014)
Small, old	0.977** (0.008)	0.977** (0.008)	0.976** (0.008)
Public	1.032*** (0.008)	1.027*** (0.008)	1.025*** (0.008)
Year FE	Yes	Yes	Yes
AIC	1,090,889	1,090,962	1,090,839
Persons	976,282	976,282	976,282
Person-years	10,000,154	10,000,154	10,000,154

Controls: Foreign/other employer, out of labor force, founder, age, income, education, children

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests).

Table 4: IV estimates of divorce (husbands)

	Small, young	Large, young	Small, old	Public sector	Second stage	Non- instrumented
Small, young instrument	0.802*** (0.004)	-0.131*** (0.002)	-0.000 (0.005)	0.008** (0.002)		
Large, young instrument	-0.200*** (0.001)	0.838*** (0.002)	-0.014*** (0.002)	-0.009*** (0.001)		
Small, old instrument	-0.040*** (0.002)	-0.031*** (0.001)	0.886*** (0.002)	-0.082*** (0.001)		
Public instrument	0.021*** (0.001)	0.005*** (0.000)	-0.024*** (0.001)	0.770*** (0.001)		
Small, young					0.732*** (0.125)	0.277*** (0.029)
Large, young					0.313*** (0.072)	0.165*** (0.030)
Small, old					0.016 (0.053)	0.024 (0.019)
Public					0.226*** (0.032)	0.102*** (0.020)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
KP F-value	40,999	141,915	112,706	348,316		
Persons	487,972	487,972	487,972	487,972	487,972	487,972
Person-years	4,999,308	4,999,308	4,999,308	4,999,308	4,999,308	4,999,308

Controls included: Foreign/other employer type, out of labor force, founder, age, wage (logged), education, children

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests).

Table 5: IV estimates of divorce (wives)

	Small, young	Large, young	Small, old	Public sector	Second stage	Non- instrumented
Small, young instrument	0.771*** (0.004)	-0.126*** (0.003)	0.012* (0.006)	0.101*** (0.004)		
Large, young instrument	-0.206*** (0.002)	0.840*** (0.003)	0.031*** (0.002)	-0.022*** (0.002)		
Small, old instrument	-0.001 (0.002)	-0.017*** (0.001)	0.886*** (0.003)	-0.150*** (0.003)		
Public instrument	0.019*** (0.001)	0.012*** (0.001)	-0.015*** (0.001)	0.752*** (0.001)		
Small, young					1.556*** (0.175)	0.340*** (0.039)
Large, young					0.798*** (0.093)	0.369*** (0.040)
Small, old					-0.380*** (0.076)	-0.140*** (0.026)
Public					-0.067 (0.035)	-0.088*** (0.021)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
KP F-value	23,258	79,958	53,619	157,062		
Persons	488,310	488,310	488,310	488,310	488,310	488,310
Person-years	5,000,846	5,000,846	5,000,846	5,000,846	5,000,846	5,000,846

Controls included: Foreign/other employer type, out of labor force, founder, age, wage (logged), education, children

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests).

Table 6: Employer type matches of married couples

Wife (%)	Husband (%)					Total
	Small, young	Large, young	Small, old	Large, old	Public	
Small, young	1.79	0.47	1.74	1.75	1.01	6.76
Large, young	0.64	1.30	1.58	2.13	1.18	6.83
Small, old	1.61	1.08	6.06	4.22	2.17	15.14
Large, old	1.96	1.72	4.90	8.36	3.05	19.99
Public	<i>4.87</i>	<i>4.13</i>	<i>12.09</i>	<i>14.19</i>	16.00	51.28
Total	10.87	8.70	26.37	30.65	23.41	100

Bold represents largest percentage of husband's employer type given wife's employer type.

Italic represents largest percentage of wife's employer type given husband's employer type.

Table 7: Estimates of divorce prevalence by type of employer

	1	2	3	4	5
Same employer	0.639*** (0.013)		0.661*** (0.014)		0.643*** (0.014)
Same employer type		0.898*** (0.007)	0.961*** (0.008)		
Both small, young				0.745*** (0.032)	0.893** (0.039)
Both large, young				0.891* (0.041)	1.056 (0.050)
Both small, old				0.772*** (0.018)	0.853*** (0.020)
Both large, old				0.915*** (0.016)	0.989 (0.018)
Both public				0.961** (0.014)	1.053*** (0.016)
Year FE	Yes	Yes	Yes	Yes	Yes
AIC	412,094	412,490	412,074	412,471	412,029
Couples	488,141	488,141	488,141	488,141	488,141
Couple-years	5,000,077	5,000,077	5,000,077	5,000,077	5,000,077

Controls: Foreign/other employer, out of labor force, founder, age, income, education, children

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests).

Figure 1: Danish divorce rate, 1990–2012

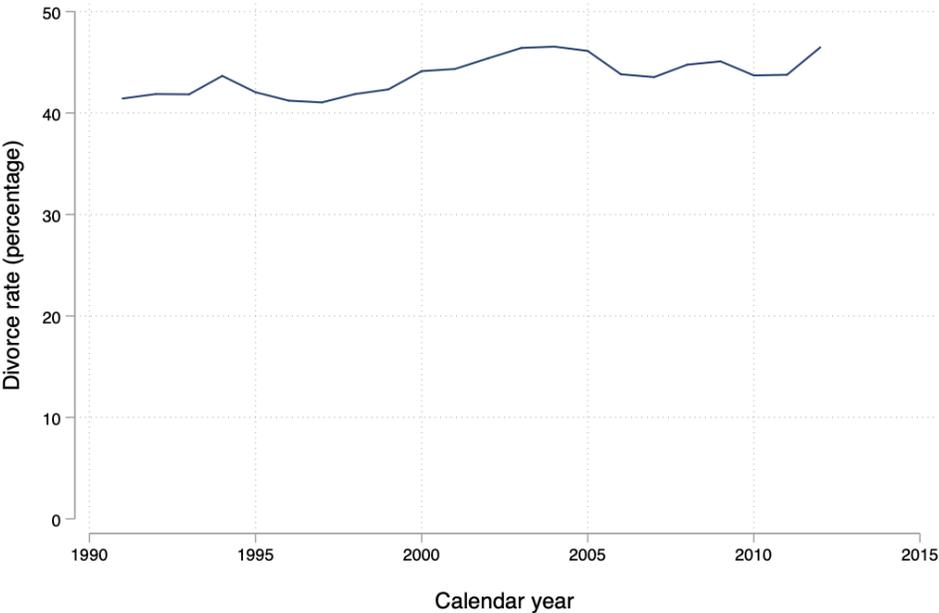


Figure 2: Baseline hazard (person-level)

