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Research Article

A new look at the housing antecedents of separation

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Abstract

BACKGROUND
Research connecting partnership dissolution to housing dynamics usually concentrates on the adverse and gendered effects of separation on housing careers. Much less is known about whether housing circumstances are also influential antecedents of separation.

OBJECTIVES
This paper examines how three dimensions of housing circumstances are associated with separation: (1) legal arrangements of housing tenure and gendered housing contracts; (2) the lived environment (space) within dwellings; and (3) couples' ability to meet housing payments.

METHODS
This theoretical framework is tested using event history probit models of separation among a large sample of couples drawn from the United Kingdom Household Longitudinal Study (UKHLS).

RESULTS
The results show that all three dimensions of housing circumstances are associated with separation. Crucially, mortgage or rent arrears strongly increase the risk of partnership dissolution, especially among married couples who otherwise typically have a low propensity to separate. The risk of partnership dissolution is greater for renters than homeowners and greater female control over housing predicts separation, with partnership dissolution more likely when only the woman is written into the dwelling contract as compared to when both partners or only the man hold contractual rights.

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CONTRIBUTION

These results suggest that growing difficulties obtaining secure and affordable housing could have negative consequences for partnership stability. We therefore call for researchers to engage more thoroughly with housing as a potential driver of demographic change.

1. Introduction

The demographic restructuring of Western societies in recent decades has been accompanied by transformations in housing systems (Graham and Sabater 2015). In Britain, increased separation and divorce rates since the 1960s[3] have had particularly profound implications for housing dynamics (Feijten and van Ham 2010). At the macro level, high rates of partnership dissolution combined with greater longevity have helped fuel an affordability and distributional 'housing crisis' by driving down average household size while increasing the number of households demanding accommodation (Berrington and Simpson 2016). Although separation can be beneficial in enabling people to leave unhappy relationships, research shows that partnership dissolution often disrupts housing careers by triggering constrained residential mobility (Cooke, Mulder, and Thomas 2016; Thomas, Mulder, and Cooke 2017), returns to the parental home (Stone, Berrington, and Falkingham 2014), exits from homeownership (Feijten 2005) and downward shifts in housing and neighbourhood quality (Feijten and van Ham 2010). These adverse residential consequences can be persistent, gendered, and may compound the economic difficulties that many people experience after partnership dissolution (Aassve et al. 2007; Dewilde 2008; McManus and DiPrete 2001).

While demographers often focus on housing as an outcome of separation (e.g., Mikolai and Kulu 2018), related research linking housing conditions to patterns of home leaving (Bayrakdar and Coulter 2018), fertility (Clark 2012; Kulu and Steele 2013), and migration (Clark and Huang 2003) suggests that housing may also act as an antecedent of separation (Krapf and Wagner 2015; Lauster 2008). Housing circumstances could shape partnership stability in several ways. First, the legal institutions of housing tenure and dwelling contracts could influence the level of joint commitments that bind partners together, as well as the ease and financial costs of separation (Feijten 2005; Lersch and Vidal 2014; Wagner 1997). Second, the living

[3] Divorce rates among two-sex couples in England and Wales stood at 0.2% (23,868 couples) in 1960 and peaked at 1.4% (165,018 couples) in 1993 (ONS 2017a). There has been some decline in the divorce rate since the early 1990s, with 106,959 couples (0.9%) divorcing in 2016 (ONS 2017a). The ONS does not record trends in separation from cohabitation.

environment within housing units, and particularly the amount of available space, could affect interpersonal interactions, psychological well-being, and opportunities for privacy in ways that alter the everyday stresses and frictions within coresidential partnerships (Jalovaara 2002). Finally, housing is usually the largest regular expenditure in household budgets, and the dire consequences of arrears-induced eviction or repossession could mean that difficulty keeping up with housing payments negatively affects relationship quality and the relative benefits that couples derive from staying together (Pleasence and Balmer 2012). To unpack these mechanisms it is important to analyse the multidimensional nature of housing circumstances, rather than treating housing as a commodity defined exclusively by tenure arrangements (Mulder 2013; Shlay 2015; Zavisca and Gerber 2016).

Disentangling how different dimensions of housing conditions are associated with separation is becoming increasingly pressing given recent changes in the UK economic and housing context. For many British households, housing affordability is being increasingly stretched by stagnant or declining real incomes, high rents, and curtailed public welfare provision, triggered partly by fiscal austerity (Gardiner and Alakeson 2014). These trends have combined with persistently high house prices and mortgage credit barriers to limit access to owner-occupation, thereby forcing a growing proportion of households to rely on relatively insecure privately rented accommodation (Kemp 2015). At the national level the distributions of living space and housing wealth are also becoming increasingly unequal across birth cohorts, regions, and social groups (Dorling 2014; Graham and Sabater 2015; McKee 2012). While housing systems and conditions are inherently spatial, similar housing trends that could influence the dynamics of partnership stability have been witnessed in the United States and continental Europe (Forrest and Hirayama 2015; Schwartz 2014).

In light of the above, this paper begins by outlining a theoretical framework linking three dimensions of housing conditions to the risk of separation. These hypothesised relationships are then tested using up-to-date data from a large, nationally representative panel survey of UK couples. After accounting for several well-known demographic and socioeconomic predictors of separation, the results indicate that housing tenure, dwelling contracts, and falling behind with housing payments are all associated with separation. Moreover, while housing payment arrears are shown to have a particularly adverse impact on partnership stability, we find the effects to be especially acute among married (as compared to cohabiting) couples. Precarious housing circumstances and partnership instability thus may be intertwined in a bidirectional relationship that reproduces social inequalities across time.

2. Theoretical framework

The 1948 Universal Declaration of Human Rights identifies housing as a fundamental human need that supports health and processes of social reproduction. At the individual level, housing is important for many aspects of life; these include personal privacy, health and subjective well-being, 'ontological security,' and economic prosperity (Dupuis and Thorns 1998; Padgett 2007; Zavisca and Gerber 2016). Dwellings are also a key site for identity construction, social interactions, and the acquisition and display of social status (Atkinson and Jacobs 2016).

Shlay (2015) and Zavisca and Gerber (2016) argue that this complexity in meaning and function demands housing be conceptualised as a multidimensional 'bundle' of attributes, each of which may have independent links to social processes. This approach indicates that different elements of the housing bundle could have differing links to partnership (in)stability. The cost-benefit calculus perspective outlined in the Social Exchange Theory of partnership satisfaction (Thibaut and Kelley 1959; Nakonezny and Denton 2008) suggests that housing circumstances might influence the risk of separation primarily through their effects on relationship stresses, partner interactions, and the perceived (non)monetary costs of separation. This chimes with Family Stress models which posit that hardship and money problems adversely affect partner interactions (both by directly fuelling stress and conflict and also by indirectly reducing partners' psychological well-being); which in turn reduces relationship quality and elevates the risk of separation (Kneale, Marjoribanks, and Sherwood 2014). Prior research indicates that three dimensions of housing circumstances are thus likely to be particularly important antecedents of partnership dissolution: (1) legal arrangements of housing tenure and dwelling contracts; (2) the lived environment within dwelling units; and (3) whether couples are able to meet their housing payments (Krapf and Wagner 2015). These dimensions and their hypothesised effects on the risk of separation are summarised in Table 1 and discussed in detail below.

Table 1: Hypothesised links between housing circumstances and separation

Dimension of housing (relevant measures)	Potential links to separation	Hypotheses
1. Legal institution (housing tenure and contractual relations)	Homeownership is a joint commitment that makes separation more disruptive and costly.	H1a: Renting is associated with a higher risk of separation than homeownership.
	Less secure private rental tenancies offering limited dwelling control undermine ontological security, locational stability, and a shared project of 'home making.'	
	Joint housing contracts are a shared partnership investment.	H1b: Couples where only the woman is a housing contract holder have a higher risk of separation than couples where both partners are contract holders.
	Sole contract holding by women increases female economic independence and lowers the relative cost of leaving a coresidential partnership.	
2. Lived environment (space pressure)	Restricted dwelling space reduces privacy and generates stress and friction between partners.	H2: Greater levels of space pressure in the dwelling are associated with an increased risk of separation.
	Limited dwelling space reduces psychological well-being, which in turn has a negative impact on relationship interactions and quality.	
3. Ability to meet housing payments (payment arrears)	Difficulties meeting housing costs and the ensuing risk of debt collection or eviction/repossession create friction between partners and lower the economic and ontological security derived from staying together.	H3: Housing payment arrears are associated with an increased risk of separation.
	Difficulties meeting housing costs undermine self-worth and psychological well-being, which in turn has a negative impact on relationship interactions and quality.	

2.1 Housing as a legal institution

Research on legal issues in the separation process has focused on the stabilising role of marriage contracts, child custody arrangements, asset division, child support payments, and the introduction of no-fault divorce laws (Amato 2000; Gregg 2006). Relatively little is known about how the legal institution of housing, as "socially constructed configurations of property rights and obligations" (Kemp 2015: 602), might influence partnership stability and potentially the observed tendency for women to initiate more divorces than men (Brinig and Allen 2000; Hewitt, Western, and Baxter 2006).

Previous studies have consistently shown that housing tenure is linked to separation (Jalovaara 2002; Lersch and Vidal 2014; Wagner 1997). Investment models cast homeownership as a partnership-specific investment that acts to increase partners' joint commitments, as well as the financial costs and legal complexity of separating (Becker, Landes, and Michael 1977; Rainer and Smith 2010; Rusbult 1983). This perspective also explains how tenure selection affects separation, as those with long-term plans and expectations of relationship stability are disproportionately likely to enter homeownership in the first place (Feijten 2005; Lersch and Vidal 2014; Painter

and Vespa 2012). In Anglophone societies with strong ideologies of property ownership (Ronald 2008), the greater legal control and security offered by homeownership may further promote partnership stability by enhancing social status and allowing couples more freedom to construct a joint identity and a shared sense of 'home' (Hoolachan et al. 2017).

In Britain, legal rights and tenure security vary greatly between the social (not-for-profit housing let at below market rents) and private (market-based) rented sectors. Despite recent UK government attempts to reduce tenure security in the social sector (Fitzpatrick and Watts 2017), the majority of social tenants continue to possess the relatively high levels of security and residential constancy that are conducive to partnership stability. The scarcity of socially rented housing and strict needs-based allocations criteria could also dissuade social tenants from separating, as this would mean that at least one ex-partner is likely to be forced out of the sector altogether.[4] However, selection of vulnerable populations with mediating characteristics that increase separation risks (such as deprivation, health issues, and histories of life course instability) into social housing could have countervailing effects.

UK wide laws governing access to social housing and post-separation dwelling rights also have the potential to structure which partner remains in the joint home after separation. Under the Housing Act (1977) local authorities are duty bound to provide housing to homeless families with dependent children, while the Children Act (1989) and the Family Law Act (1996) prioritise child well-being and thus aim to protect the living arrangements of the child(ren) and their primary caregiver. Where 91% of lone-parent households are female-headed in the United Kingdom (ONS 2015), recent research suggests that separated mothers are considerably more likely to remain in the socially rented home than separated fathers (Thomas, Mulder, and Cooke 2017). From the perspective of New Home Economics models – which suggest that female economic independence increases the risk of partnership dissolution by reducing the relative costs women incur from exiting an unhappy partnership (Becker, Landes, and Michael 1977; Killewald 2016) – this combination of gendered caregiving roles and strict rules of tenure access may reduce the relative costs of separation for women living in social housing.

Housing rights are much less favourable in the deregulated British private rental market (Kemp 2015). While characteristics vary, the private rental sector is generally characterised by market rents and short-term fixed lets (typically six or twelve months), after which landlords can terminate the tenancy or adjust the rent. Private tenants are

[4] Ministry for Housing, Communities and Local Government (2018) figures indicate that 1.16 million English households were on the waiting list for social housing in 2017, down from a recent peak of 1.8 million in 2012. While there are geographic variations, official statistics show that virtually all English local authorities currently have a waiting list containing a thousand or more households.

frequently prohibited from making material adjustments (such as decorating the dwelling), while landlord inspections can further undermine the development of a secure 'sense of home' (Hulse and Milligan 2014). Ideas of housing insecurity suggest that the stress generated by residential uncertainty and a lack of control in private rental accommodation may lower psychological well-being, feed intra-couple conflict, and increase the risk of separation. However, the relative flexibility associated with private renting can also be desirable for certain people (particularly early in the life course), while easy termination of dwelling contracts could also allow partners to more quickly and amicably separate without incurring a major financial penalty.

Housing contract arrangements are another legal factor that could configure partnership dynamics and stability. From an investment perspective, the balance of rights and claims that come with joint dwelling ownership or tenancy could increase the costs and thus reduce the risks of separation (Gerber and Zavsica 2015; Wagner, Schmid, and Weiß 2015). In line with New Home Economics models, analysis of Russian data by Gerber and Zavisca (2015) shows that sole ownership by women is linked to an increased likelihood of divorce. By contrast, a lack of legal rights or claims to property is likely to increase female economic dependence and reduce the risk that women are willing to end unhappy partnerships where the man is the sole housing contract holder.

In Britain, having one's name on a dwelling contract offers legal protections in the event of separation. These protections include the ability to remain in the joint home and claim a financial share of any owner-occupied property (Lersch and Vidal 2016). In recent years the latter has become increasingly critical for maintaining one's housing conditions after separation, as high house prices and more stringent mortgage lending disadvantage potential buyers with little equity (Meen 2013). Such conditions could reduce the appeal of separation for partners who are not in the contract. Moreover, sole contract holding may indicate that the noncontracted partner moved into the other's dwelling and might therefore be expected to be the one to leave when the relationship ends (a customary 'last in, first out' principle). It should be noted that, even for those not in the contract, marriage provides additional legal protections and rights that are not available to cohabitants. These include the ability to maintain residence and in some cases claim a financial share of any joint property (Lersch 2017).

2.2 Housing as a lived environment

The distribution of housing space is becoming increasingly unequal in Britain, with some authors suggesting that inequality in space consumption has now returned to levels not seen since the First World War (Tunstall 2015). While some, predominantly

older, households have access to large quantities of space (spread across multiple homes for 10% of the adult population), affordability pressures combined with a trend towards the construction of small units have forced many younger, poorer, and minority households into increasingly cramped living conditions (Gardiner 2017; Johnston et al. 2016).

A large body of research from various countries indicates that cramped housing and enforced nonfamilial sharing with strangers can have adverse consequences for a range of mental and physical health outcomes (Evans, Wells, and Moch 2003; Shaw 2004; Solari and Mare 2012; Wilkinson and Ortega-Alcázar 2017). As housing provides the key site for everyday routines and interactions, a real or perceived shortage of space may reduce privacy, disrupt sleep patterns, undermine coping resources, and induce psychological stress as well as social withdrawal or depression (Conley 2001; Wells and Harris 2007). These pressures could directly or indirectly cause friction in couples (Gove, Hughes, and Galle 1979). In two rare empirical tests of these ideas, fewer rooms and crowded housing were found to be linked to an increased risk of partnership dissolution in Finland and Germany (Jalovaara 2002; Krapf and Wagner 2015). However, in Jalovaara's (2002) study the adverse effects of overcrowding disappeared once other socioeconomic factors were accounted for; while for Krapf and Wagner (2015) the association disappeared with the inclusion of housing tenure.

2.3 Ability to meet housing payments

Previous US and UK studies show that financial strain reduces the stability of relationships (Killewald 2016; Kneale, Marjoribanks, and Sherwood 2014). Economic hardship caused by inadequate or insecure income is thought to increase partners' psychological stress, create conflicts over money, lower emotional support, and thus reduce relationship quality (Amato and Previti 2003; Conger et al. 1990; Dew and Yorgason 2010; Johnson and Booth 1990). However, others argue that hardship can also dampen the risk of separation if partners feel that they cannot afford to abandon their coresidential economies of scale, especially when the macroeconomic context is unfavourable (Harknett and Schneider 2012).

Much of the literature on hardship and separation concentrates on employment and incomes without considering housing. This is problematic for two reasons. First, housing tends to be the largest regular household expenditure throughout at least early adulthood and midlife (Schwartz and Seabrooke 2008). Excluding housing-related costs (i.e., utility bills, insurance, maintenance and taxes), recent English statistics (2015–2016) indicate that households with mortgages devote an average of 18% of their income to repayments. By contrast, social and private renters spend proportionally

greater amounts on rent (DCLG 2017). Studies by think tanks and pressure groups have charted the burden these costs place on British households who are often also grappling with declining real incomes, job insecurity, reduced public welfare provision and high levels of unsecured debt (Shelter 2017). Terms encapsulating aspects of these multifaceted strains – such as the 'precariat,' 'squeezed middle,' or 'Just About Managing' (JAM) families – have now become an established part of public debate and the political lexicon.

Second, problems paying for housing and falling into arrears are likely to have particularly adverse consequences for partnership stability (Bridges and Disney 2012; Pleasence and Balmer 2012). As housing is so central to people's well-being and identity, perceived threats to housing security such as the risk of debt collection or eviction/repossession following rent or mortgage arrears are likely to have extremely negative impacts on well-being, stress, partner interactions, and thus relationship quality (Pleasence and Balmer 2012; Taylor, Pevalin, and Todd 2007). This means that problems specifically with housing payments could have particularly potent links to separation, and ones that are not necessarily mediated by general levels of hardship.

In a rare test of this idea, Lauster's (2008) Swedish study showed that an inability to afford rents resulted in a marginal increase in separation risk. However, Lauster's (2008) measure of affordability was defined using aggregate house price data at the regional administrative level (*Län*) rather than the household scale where economic risks and stresses are actually experienced. Household level affordability metrics defined using cost-to-income ratios are also likely to only partially capture the housing insecurity and stress generated by difficulties paying for housing because they fail to account for the buffering effects of wealth holdings and intra-family transfers and support practices. Moreover, the proportion of income that households can devote to housing without undermining their welfare can, and often does, grow as absolute income increases (Dewilde and De Dekker 2016). For example, paying 30% of an income of £12,000 on housing leaves much less to survive on than paying 60% of an income of £100,000.

2.4 Other antecedents

Debates about whether marriage bolsters relationship stability suggest that housing circumstances could have different links to the risk of separation from cohabiting and married partnerships. In general, we might expect that the marital bond and the unobserved selection of highly committed partners into marriage might insulate spouses from the effects of housing conditions and stresses. By contrast, the relative informality

and 'trial' nature of many cohabiting relationships could mean that factors such as housing insecurity have more potent links to separations from cohabitation.

Several reviews and empirical studies have identified multiple other life course predictors of separation (Böheim and Ermisch 2001; Jalovaara 2002; Krapf and Wagner 2015; Lyngstad and Jalovaara 2010). Generally speaking, this work shows that the risk of separating declines with union duration (in part due to selective survival); the risk of dissolution is higher for partnerships formed early in life or second unions; and the risk of separation is transmitted between generations (Amato and DeBoer 2001; Lyngstad and Jalovaara 2010). By contrast, markers of life course stability and joint commitments (such as marriage or having joint children) are associated with partnership stability. Again, this is probably partly due to selection effects (Lyngstad and Jalovaara 2010), for example as more committed couples disproportionately opt to have children, who then constitute an additional shared commitment (Feijten 2005).

The influence of socioeconomic characteristics is more complex. In absolute terms, financial hardship and Family Stress models propose that greater income, resources from employment, and educational attainments reduce economic stress. This reduced pressure generates better quality interactions between partners, fewer conflicts, and hence partnership satisfaction and stability (Killewald 2016; Kneale, Marjoribanks, and Sherwood 2014). Papp, Cummings, and Goeke-Morey's (2009: 99) US diary analysis indicates that money conflicts are more toxic for relationships than other sources of friction (e.g., arguments about children or division of labour) as they are 'more likely to persist as important issues, be mishandled, and remain unresolved.' In contrast, New Home Economics models argue that the gendered division of human capital and resources in couples also matters as greater female economic independence allows women to more easily leave an unfulfilling relationship (Becker, Landes, and Michael 1977). To isolate the housing antecedents of separation our models therefore include a wide range of life course controls and couple attributes.

3. Data and methods

3.1 Data and sample

Our data comes from the first seven waves of the United Kingdom Household Longitudinal Study (UKHLS, also known as Understanding Society). UKHLS began in 2009 as the larger successor to the British Household Panel Survey (BHPS). In the first

wave of UKHLS approximately 51,000 adults, from a nationally representative sample[5] of 30,000 households, completed face-to-face interviews (Knies 2017). Participants have subsequently been tracked and re-interviewed at annual intervals, although data collection for each wave is spread across two calendar years (Knies 2017).

Our initial sample comprised the female partner from all opposite-sex coresident couples who completed full interviews in the first wave of UKHLS. We then used data from the household relationship grid and each annual interview to track the progress of these partnerships through the first seven waves of UKHLS. New partnerships forming during the panel were absorbed into the sample and followed in the same way if the woman had not previously been in a tracked relationship with a different partner. Cases where either partner was aged 65 or above when first interviewed were removed as retirement means that the economic determinants of 'silver separations' probably differ from partnership dissolutions in the working age population (cf., Böheim and Ermisch 2001).

After converting the data file to couple-year format, we tracked the progress of the selected partnerships across each subsequent wave *t* to *t+1* interval. There are four competing termination outcomes for observed relationships between each of the consecutive pair of waves: (1) the partnership ends in separation; (2) the partnership ends in the death of one or both partner(s); (3) the couple drop out of UKHLS; or (4) the partnership is censored by the end of the survey in wave seven. Separation was defined following Jenkins (2009) and Brewer and Nandi (2014) as a transition from a coresidential marriage or a cohabiting partnership observed at *t* to living apart from the wave *t* spouse or partner at *t+1*. Where only one partner was observed to *t+1* we used their records to infer if separation had occurred. A small number of cases where relationships appeared to dissolve but the partners stayed living in the same household were discarded. A handful of apparent separations, that closer inspection revealed were triggered by one partner making a health, infirmity, or care related move, were also excluded.

Partnerships ending in widowhood, attrition and those terminated by the end of the study period were included in the sample until the final wave at which they were at risk of separating at *t+1*. In practice this meant that all couple-years in wave seven were discarded as all were censored by design (at *t+1*). Couples could not re-enter the sample after a gap in their participation history because we do not know about their circumstances during the intervening period. After discarding a very small proportion of cases with missing data, the final sample comprised 35,657 couple-years containing 632 separations (1.8% of cases), 106 widowhood events (0.3%), 3,781 attritions

[5] UKHLS also contains an Ethnic Minority Boost (EMB) oversample of five large minority groups (Knies 2017). Further tests of model fit (not shown) indicate that controlling for EMB sample membership did not affect the results.

(10.6%) and 31,138 continuing relationship observations (87.3%). In some of the analyses (discussed further below) we treat cases where a partnership ended in attrition as missing data rather than noninformatively censored relationships (i.e., we replaced a 0 in the separations model with a missing value where the competing event of attrition subsequently occurred) in order to test whether selective dropout from UKHLS could have induced bias into our results. Further exploration of the baseline characteristics of couples who drop out of UKHLS showed that youth, being born outside Britain, Ethnic Minority Boost subsample membership, lower levels of education, lower socioeconomic status, renting privately, residential crowding, living in London, and wanting to move were associated with attrition. To reduce the risk of selection bias we included most of these well-known attrition predictors in the regression models (Brewer and Nandi 2014).[6]

3.2 Measures

As partnerships could have been in progress for different lengths of time at wave one, we used the relationship history questions asked in the first wave of UKHLS, together with the survey's 'annual events' module, to identify the date when each partnership began (Böheim and Ermisch 2001). A variable measuring the elapsed number of months since the couple first began to live together was then defined, log transformed, and included in the regression models to capture the duration dependence of separation risk. Further tests (not shown) rejected more complex polynomial specifications of relationship duration.

Four variables are used to test the hypothesised associations between housing attributes at *t* and the risk of subsequent partnership dissolution to *t+1*. Categorical indicators of housing tenure and housing contract status were used to capture the legal dimension of housing and test Hypotheses 1a and 1b. The links between the residential living environment and partnership stability (Hypothesis 2) were measured with a 'roomstress' variable.[7] This is defined as the log of the number of household members divided by the number of rooms (excluding kitchens and bathrooms). Finally, we created a dummy identifying households who reported falling behind with their rent or

[6] The poor fit of supplementary probit models predicting attrition as a function of baseline characteristics suggests that survey dropout is largely unrelated to our main independent variables (results not shown). The selection models of sample retention shown in Appendix Table A-1 also have low predictive power.

[7] We also tested whether sharing with unrelated individuals predicts separation. This variable was not included in the final models as it did not improve model fit, alter other parameters, or approach conventional levels of statistical significance.

mortgage payments at any point over the last twelve months to test Hypothesis 3.[8] As this is a household level variable and noncontracted couples may not be responsible for housing-related payments, we have rerun all models after restricting the sample to cases where at least one partner is a housing contract holder. This had no impact on the substantive findings.

A number of additional controls were defined. These include a time-varying cohabitation dummy, with married as the reference category, and a computed measure of female age at partnership formation. Kalmijn (1998) notes that homogamy can strengthen partnerships and so we defined indicators of similarity in age and attainment of university degree level qualifications.[9] To probe the New Home Economics model's predictions these variables are broken down by gender and we controlled for the woman's share of the couple's labour income[10] (see Killewald 2016 for evidence that time use and breadwinner norms may also be relevant explanations for the effects of gendered economic status).

We used a categorical indicator to identify couples living with joint children of different ages and dummies were also defined for previous marriages and the presence of children belonging to only one partner. A categorical indicator of the woman's assessment of her current financial position was also defined to disentangle whether general economic hardship confounds the effects of housing arrears.[11] While a sufficiently detailed analysis of geographic variations in local and regional housing-market conditions demands a larger sample and is beyond the scope of the current study, the models also account for variation across Government Office Regions and survey waves. All variables included in the analyses are measured at *t* and summary statistics are reported in Table 2.

[8] It is not possible to generate a richer measure because UKHLS does not ask respondents the value and duration of their arrears. We also cannot know how forbearing different landlords or mortgage lenders are likely to be over late payments. However, households usually assign a very high priority to meeting their housing costs and so we consider the existence of any arrears to be a potent indicator of problems.

[9] Further tests were conducted to assess whether religious affiliation or childhood experience of partnership dissolution predict separation. These models showed that the risk of separation is higher for couples who do not belong to a religion. Couples where either partners' parents separated early in life also have an elevated risk of splitting up. However, we opted to drop these variables from the final analyses because they have relatively large numbers of missing values and because including them did not change the other parameters.

[10] This variable performed better than an indicator of gendered labour force participation.

[11] This variable performed better than observed income measures and should help pick up any effects of income volatility associated with employment insecurity. A subjective measure also better captures the way that relative economic deprivation (i.e., a perceived inability to 'keep up with the Joneses') and not just objective hardship can generate stress and money-related strife within relationships (Papp, Cummings, and Goeke-Morey 2009).

Table 2: Summary statistics

Categorical variable (measured at *t*)	Full sample		Separate to *t+1*		Separation rate (1.8% overall)
	Col %	Range	Col %	Range	
Housing tenure					
homeownership	75.4	0,1	48.9	0,1	1.2
social rent	12.5	0,1	27.9	0,1	4.0
private rent	12.1	0,1	23.3	0,1	3.4
Housing contract status					
both partners	77.0	0,1	56.0	0,1	1.3
man only	11.6	0,1	13.3	0,1	2.0
woman only	9.7	0,1	24.5	0,1	4.5
neither partner	1.7	0,1	6.2	0,1	6.3
Housing payment arrears	8.4	0,1	19.3	0,1	4.1
Cohabiting	18.2	0,1	51.0	0,1	5.0
Age gap between partners					
man > 5 years older	20.2	0,1	25.0	0,1	2.2
similar ages	75.6	0,1	68.5	0,1	1.6
woman > 5 years older	4.2	0,1	6.5	0,1	2.7
Country of birth					
both UK	76.8	0,1	78.0	0,1	1.8
man overseas	5.1	0,1	5.1	0,1	1.8
woman overseas	6.1	0,1	7.4	0,1	2.2
both overseas	12.0	0,1	9.5	0,1	1.4
Joint coresident children					
none	40.3	0,1	46.5	0,1	2.1
youngest aged < 5 years	22.6	0,1	30.1	0,1	2.4
youngest aged ≥ 5 years	37.1	0,1	23.4	0,1	1.1
Other coresident children	8.4	0,1	20.7	0,1	4.4
Previously married	25.0	0,1	29.4	0,1	2.1
Education					
neither has degree	58.2	0,1	67.9	0,1	2.1
man has degree	11.4	0,1	8.2	0,1	1.3
woman has degree	11.8	0,1	12.7	0,1	1.9
both have degrees	18.6	0,1	11.2	0,1	1.1
Woman's share of labour income					
< 40%	51.2	0,1	46.0	0,1	1.6
40–60%	33.3	0,1	34.5	0,1	1.8
> 60%	15.5	0,1	19.5	0,1	2.2
Financial situation					
alright/comfortable	64.1	0,1	45.3	0,1	1.3
getting by	25.1	0,1	34.8	0,1	2.5
difficulties	10.8	0,1	19.9	0,1	3.3
Survey wave					
wave 1 (2009–2010)	24.3	0,1	28.0	0,1	2.0
wave 2 (2010–2011)	19.3	0,1	18.8	0,1	1.7
wave 3 (2011–2012)	16.2	0,1	15.2	0,1	1.7
wave 4 (2012–2013)	14.7	0,1	14.7	0,1	1.8
wave 5 (2013–2014)	13.5	0,1	14.4	0,1	1.9
wave 6 (2014–2015)	12.0	0,1	8.9	0,1	1.3

Table 2: (Continued)

Categorical variable (measured at *t*)	Full sample		Separate to *t+1*		Separation rate (1.8% overall)
	Col %	Range	Col %	Range	
Region					
North East	4.2	0,1	4.4	0,1	1.9
North West	11.2	0,1	12.3	0,1	2.0
Yorkshire and the Humber	8.2	0,1	8.9	0,1	1.9
East Midlands	8.3	0,1	8.1	0,1	1.7
West Midlands	8.8	0,1	7.0	0,1	1.4
East of England	9.6	0,1	9.3	0,1	1.7
London	12.3	0,1	12.3	0,1	1.8
South East	13.3	0,1	13.5	0,1	1.8
South West	8.6	0,1	9.5	0,1	2.0
Wales	4.7	0,1	5.5	0,1	2.1
Scotland	6.8	0,1	7.3	0,1	1.9
Northern Ireland	4.1	0,1	1.9	0,1	0.8
Roomstress (persons/room)	0.7	0.1–6.0	0.9	0.1–2.5	
Partnership duration (months)	214.3	0–609	107.0	0–533	
Age at partnership formation (years)	26.5	15–63	26.4	15–61	
N cases	35657		632		35657

3.3 Methods

A series of discrete-time event history probit[12] models of separation between *t* and *t+1* were fitted where elapsed partnership duration captures the time dependent nature of separation risk (Allison 2014; Böheim and Ermisch 2001). These models began by testing for associations between housing factors and separation, before proceeding to explore whether housing attributes still matter after controlling for potential confounders. Finally, we interacted the rent/mortgage arrears variable with partnership type to test if difficulty meeting housing costs plays a different role in the stability of marital and cohabiting relationships. Extra models interacting partnership type with tenure, housing contract status, and roomstress found no evidence of relevant interactions and so are not reported.

As UKHLS suffers from participant attrition (Knies 2017), we explored whether selective dropout is likely to influence our findings by comparing our main probit estimates with the results of two-step probit models fitted with the 'heckprob' command in Stata 14. In the first step we modelled the risk of retention, before using this information in the second equation to model separation conditional on remaining part of the sample to *t+1*. This approach requires identifying at least one plausible

[12] As observed separations are rare in the data we refitted the models using logit and cloglog link functions. The results were very similar.

instrument predicting panel retention but not separation (Stone, Berrington, and Falkingham 2014). For this study we used a survey paradata instrument measuring whether the interviewer reported that one or both partners were previously suspicious of the survey (Bayrakdar and Coulter 2018; Stone, Berrington, and Falkingham 2014 for similar approaches). This variable was not found to predict separation but including it improved the retention model. As the *rho* term indicating correlated residuals was never significant and the heckprob parameter estimates were very similar to the standard probits, we conclude – insofar as is possible – that attrition has not introduced significant bias into our findings. We therefore report the results of the standard probits in the main text. The results of the two-step models are shown in Appendix Table A-1.

4. Results

4.1 Descriptives and baseline models

Table 2 shows a suite of descriptive statistics for categorical (upper panel) and continuous variables (lower panel). Columns two to five contrast the attributes of partnerships ending in separation at *t+1* (columns four and five) with those of the entire sample (columns two and three). The raw separation rate for categories of each independent variable is then shown in column six.

The results in Table 2 correspond with the predictions of all three hypotheses. Renters are over-represented among separating cases and the separation rate for private (3.4%) and social (4.0%) tenants is much higher than for homeowners (1.2%). The separation rate is much higher if neither partner (6.3% – but based on a low *n*) or only the woman (4.5%) is a housing contract holder than if only the man (2.0%) or both partners (1.3%) are on the housing contract. Average levels of roomstress are greater for separating couples, while 19.3% of separators had been behind with their mortgage or rent payments as opposed to just 8.4% of observations from stable partnerships. The risk of separation for couples in housing payment arrears is over twice the sample average. This result fits with analyses of pre-2010 UK data that documents a strong association between debt or payment arrears and separation (Bridges and Disney 2012; Pleasance and Balmer 2012).

In addition to housing, Table 2 shows that most of the remaining independent variables have the expected links with separation. Cohabitation is much more common for separating couples (51%) than among the entire sample (18.2%) and the 5% separation rate for cohabitants is far above the 1.8% sample average. Couples with a large gap in partner age are particularly prone to separate, as are couples where neither partner has bachelor degree level qualifications. Previous marriages and the presence of

children from previous relationships are associated with an elevated propensity to separate. As predicted by New Home Economics models, the risk of separation is slightly increased if the female partner earns over 60% of the joint labour income. Rates of self-reported financial difficulties are twice the sample average for separating cases, with 3.3% of couples reporting financial difficulties subsequently separating as opposed to 1.3% of those reporting that they are 'doing alright' or 'living comfortably.'

Table 3 presents the results of three initial probit models of separation, one for each of our three housing dimensions, controlling only for partnership duration. As anticipated from previous research, all models show that the risk of partnership dissolution falls as the duration of relationships increases. Model 1 provides initial support for H1a and H1b as renting (both private and social) and sole contract holding by women are both associated with a considerably higher risk of separation when compared against homeowners and joint contract holders. Models 2 and 3 support H2 and H3 respectively as greater levels of roomstress (Model 2) and housing arrears (Model 3) are associated with a considerably higher risk of separation.

Table 3: Probit models of the housing antecedents of separation

Variables	Model 1: Legal/institutional			Model 2: Living conditions			Model 3: Arrears		
	Coeff.	SE	95% CI	Coeff.	SE	95% CI	Coeff.	SE	95% CI
Ln partnership duration	–0.252***	0.015	[–0.282, –0.223]	–0.293***	0.014	[–0.320, –0.266]	–0.304***	0.013	[–0.330, –0.278]
Tenure (ref. homeownership)									
social rent	0.351***	0.044	[0.266, 0.437]						
private rent	0.203***	0.046	[0.112, 0.293]						
Housing contract status (ref. both)									
man only	0.014	0.052	[–0.089, 0.116]						
woman only	0.218***	0.049	[0.123, 0.314]						
neither partner	0.315***	0.087	[0.144, 0.485]						
Ln roomstress				0.290***	0.040	[0.211, 0.369]			
Arrears							0.340***	0.046	[0.249, 0.431]
Constant	–1.060***	0.080	[–1.216, –0.903]	–0.623***	0.064	[–0.749, –0.498]	–0.716***	0.063	[–0.840, –0.591]
N	35657			35657			35657		
Log-pseudolikelihood	–2891.648			–2919.630			–2922.783		
McFadden's pseudo-r2	0.089			0.080			0.079		
AIC (degrees of freedom)	5797.296 (6)			5845.259 (2)			5851.565 (2)		

Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$. AIC = Akaike's Information Criterion. 95% CI = 95% confidence interval. Cluster robust standard errors.

4.2 Modelling the housing antecedents of separation

Table 4 presents the results of a probit model that tests the hypotheses after controlling for a range of potentially confounding demographic and socioeconomic characteristics.

The estimates are reported as both standard probit coefficients (columns two to four) and Average Marginal Effects (AMEs – columns five to seven), which provide a useful way to gauge the average magnitude of each variable's effect on the absolute probability of separation. Overall, the model provides evidence that multiple dimensions of housing circumstances are important independent antecedents of separation. Even after accounting for demographic and socioeconomic composition, the magnitude of the housing variables' AMEs is comparable to those of more frequently discussed predictors of partnership dissolution, such as the presence of joint children, economic hardship, and the gendered division of couple income.

Table 4: Probit regression model of separation with controls (Model 4)

Variable	Coeff.	SE	95% CI	AME	SE	95% CI
Ln partnership duration	–0.223***	0.020	[–0.263, –0.183]	–0.009***	0.001	[–0.010, –0.007]
Tenure (ref. homeownership)						
social rent	0.132*	0.054	[0.027, 0.237]	0.005*	0.002	[0.001, 0.010]
private rent	0.091	0.051	[–0.008, 0.190]	0.004	0.002	[–0.001, 0.008]
Housing contract status (ref. both)						
man only	0.024	0.055	[–0.083, 0.131]	0.001	0.002	[–0.003, 0.005]
woman only	0.145**	0.052	[0.043, 0.247]	0.006*	0.002	[0.001, 0.011]
neither partner	0.212*	0.093	[0.031, 0.394]	0.010	0.005	[–0.000, 0.019]
Ln roomstress	0.131*	0.060	[0.014, 0.248]	0.005*	0.002	[0.001, 0.010]
Arrears	0.184***	0.051	[0.084, 0.285]	0.008**	0.003	[0.003, 0.013]
Cohabiting	0.289***	0.045	[0.201, 0.377]	0.013***	0.002	[0.008, 0.017]
Age at partnership formation – 25	–0.018***	0.003	[–0.025, –0.012]	–0.001***	0.000	[–0.001, –0.000]
Age gap (ref. similar)						
man > 5 years older	0.000	0.044	[–0.087, 0.086]	0.000	0.002	[–0.003, 0.003]
woman > 5 years older	0.217**	0.082	[0.056, 0.378]	0.010*	0.005	[0.001, 0.019]
Country of birth (ref. both UK)						
man overseas	–0.071	0.080	[–0.228, 0.086]	–0.003	0.003	[–0.008, 0.003]
woman overseas	0.127	0.067	[–0.005, 0.260]	0.006	0.003	[–0.001, 0.012]
both overseas	–0.131	0.069	[–0.267, 0.004]	–0.005*	0.002	[–0.009, –0.000]
Joint coresident children (ref. none)						
youngest aged < 5 years	–0.074	0.052	[–0.175, 0.028]	–0.003	0.002	[–0.007, 0.001]
youngest aged ≥5 years	–0.030	0.054	[–0.136, 0.077]	–0.001	0.002	[–0.005, 0.003]
Other coresident children	0.134*	0.056	[0.024, 0.244]	0.006*	0.003	[0.001, 0.011]
Previously married	0.123*	0.051	[0.023, 0.223]	0.005*	0.002	[0.001, 0.009]
Education (ref. neither has degree)						
man has degree	–0.038	0.062	[–0.159, 0.084]	–0.001	0.002	[–0.006, 0.003]
woman has degree	0.003	0.056	[–0.106, 0.113]	0.000	0.002	[–0.004, 0.005]
both have degrees	–0.113*	0.057	[–0.226, –0.001]	–0.004*	0.002	[–0.008, –0.000]
Woman's share labour income (ref. < 40%)						
40–60%	0.014	0.040	[–0.065, 0.093]	0.001	0.002	[–0.002, 0.003]
≥ 60%	0.143**	0.049	[0.047, 0.240]	0.006**	0.002	[0.002, 0.010]
Financial situation (ref. alright or better)						
getting by	0.148***	0.042	[0.067, 0.229]	0.006***	0.002	[0.002, 0.009]
difficulties	0.218***	0.053	[0.113, 0.322]	0.009***	0.002	[0.004, 0.014]

Table 4: (Continued)

Variable	Coeff.	SE	95% CI	AME	SE	95% CI
Region (ref. South East)						
North East	–0.097	0.098	[–0.288, 0.095]	–0.004	0.004	[–0.011, 0.003]
North West	–0.021	0.068	[–0.155, 0.113]	–0.001	0.003	[–0.006, 0.005]
Yorkshire and the Humber	–0.067	0.075	[–0.213, 0.079]	–0.003	0.003	[–0.008, 0.003]
East Midlands	–0.040	0.078	[–0.193, 0.113]	–0.002	0.003	[–0.008, 0.005]
West Midlands	–0.128	0.079	[–0.283, 0.027]	–0.005	0.003	[–0.010, 0.001]
East of England	–0.005	0.075	[–0.151, 0.141]	0.000	0.003	[–0.006, 0.006]
London	–0.022	0.072	[–0.163, 0.120]	–0.001	0.003	[–0.007, 0.005]
South West	0.034	0.075	[–0.112, 0.180]	0.001	0.003	[–0.005, 0.008]
Wales	–0.017	0.087	[–0.188, 0.154]	–0.001	0.004	[–0.008, 0.006]
Scotland	–0.024	0.082	[–0.184, 0.136]	–0.001	0.003	[–0.007, 0.006]
Northern Ireland	–0.267*	0.121	[–0.504, –0.031]	–0.009**	0.003	[–0.015, –0.002]
Survey wave (ref. 1, 2009–2010)						
wave 2 (2010–2011)	0.014	0.052	[–0.089, 0.117]	0.000	0.002	[–0.003, 0.004]
wave 3 (2011–2012)	0.066	0.056	[–0.044, 0.176]	0.002	0.002	[–0.002, 0.007]
wave 4 (2012–2013)	0.103	0.057	[–0.009, 0.215]	0.004	0.002	[–0.000, 0.008]
wave 5 (2013–2014)	0.181**	0.058	[0.067, 0.295]	0.008**	0.003	[0.002, 0.013]
wave 6 (2014–2015)	0.038	0.067	[–0.093, 0.170]	0.001	0.002	[–0.003, 0.006]
Constant	–1.289***	0.123	[–1.530, –1.047]			
N	35657					
Log-pseudolikelihood	–2784.487					
McFadden's pseudo-r2	0.123					
AIC (degrees of freedom)	5654.973 (42)					

Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$. AIC = Akaike's Information Criterion. 95% CI = 95% confidence interval. AME = Average Marginal Effect. Cluster robust standard errors.

Although selection processes can at least partly explain observed associations between housing tenure and partnership dissolution (Lersch and Vidal 2014), Table 4 supports H1a by showing that the risk of separation is higher for social tenants and, to a lesser extent, private renters than for homeowners. While the estimate for private renting comes with relatively large standard errors, the general direction of the coefficient and AME fits with the idea that flexibility or insecurity in the market rental sector is associated with flexibility or instability in partner relationships. As tenure security and rights are stronger in the low cost social rental sector, the increased propensity for separation among social renters (≈0.5 percentage points higher than homeowners[13]) could be due to administrative housing allocations channelling more disadvantaged groups, with less stable life course histories, into the sector. This fits with the perception that social housing is becoming an increasingly residual 'ambulance service' tenure for the most vulnerable (Fitzpatrick and Watts 2017).

[13] The magnitude of the AMEs looks very small but these should be judged in relation to the very low baseline risk of separation.

A measure of whether the man, woman, or both partners are written into the housing contract (rental or ownership) provides a more direct measure of micro-level patterns of legal dwelling rights within couples, and is likely more robust to confounding selection effects than measures of housing tenure. As predicted by H1b, the risk of separation is greater when women are sole owners or sole renters as compared with couples where both partners are contract holders. This could be because women with sole property rights are empowered to end unhappy relationships without being put off by a fear of adverse housing consequences or having to move out. By contrast, the estimated pattern in cases where the man is the sole owner or renter is very similar to cases where both partners are contract holders. In particularly precarious cases where neither partner is in the housing contract,[14] we observe a considerable increase in separation risk (≈1 percentage point higher than cases where both are contracted). While women tend to more often initiate divorce than men (Brinig and Allen 2000; Hewitt, Western, and Baxter 2006), these dwelling contract-related findings are broadly consistent with New Home Economics models. Where previous literature has emphasised how between-partner differences in income, education and age interact with gender to inform relative levels of 'marital power' and female independence, gender asymmetries in housing contract rights appear to carry similar weight in informing individual cost-benefit calculations of whether to stay in a relationship. Contrasting with previous studies (Jalovaara 2002; Krapf and Wagner 2015), Table 4 shows that space pressure in dwellings is associated with separation, even after accounting for numerous demographic and socioeconomic variables. Preliminary analyses also tested whether the presence of 'other' household members, unrelated to the focal couple, increases the risk of separation. Although this variable had large standard errors and was removed from the final models (see footnote 5), the general direction of its effect indicated that living with nonrelatives is positively associated with separation.

The centrality of housing in people's lives may mean that perceived economic threats to residential security have especially potent effects on individual well-being and partnership stability (Taylor, Pevalin, and Todd 2007). With this in mind, H3 posited that arrears with mortgage or rent payments will be a particularly important measure of housing instability that should feed through into an increased risk of separation. The model in Table 4 supports this hypothesis, with arrears substantially increasing the risks of separation (by ≈0.8 percentage points), even after controlling for a self-reported measure of broader financial hardship. This is a concerning result as a

[14] A coresident parent or parent-in-law of the focal woman is the legal owner or tenant of the couple's dwelling in approximately 54% of these cases. Someone living outside the household holds the dwelling contract for a further 26% of noncontracted couples (the data do not record who this individual is). We can speculate that these external contract holders are often family members as in the majority of instances the couple live rent free or in a dwelling that is owned outright.

growing proportion of households in Britain and other Western countries are struggling to meet the burden of housing costs (Gardiner and Alakeson 2014).

Model 5 in Table 5 includes an interaction between the rent/mortgage arrears variable and marital status to test if difficulties meeting housing payments play a different role in the stability of marital and cohabiting relationships. The difference in the risk of separation between married people who have experienced arrears and married people who have not, is greater than that which separates cohabiting couples with and without arrears. This finding runs in the opposite direction to our expectation, with married couples, who typically have a lower probability of separating, being apparently more sensitive to the pressures that housing affordability problems can place on relationships. There are no immediately obvious mechanisms to explain this interesting and unexpected finding, although normative expectations of marriage may play a role. Lauster (2010) has argued that status as a homeowner, in a spacious detached dwelling with more than one bathroom, has become an increasingly important prerequisite in the performance of 'proper motherhood,' with sizable differences in childbearing between mothers with and without these prerequisites. In a similar manner, housing is likely deeply ingrained in normative imaginings of the proper performance of marriage, where the 'shock' of housing arrears and housing insecurity are diametrically opposed to expectations of economic and residential stability within marriage

Table 5: Probit model of separation interacting cohabitation with arrears (Model 5)

Variable	Coeff	SE	95% CI
Ln partnership duration	–0.223***	0.020	[–0.263, –0.183]
Tenure (ref. homeownership)			
social rent	0.137*	0.053	[0.032, 0.241]
private rent	0.088	0.051	[–0.011, 0.187]
Housing contract status (ref. both)			
man only	0.024	0.055	[–0.083, 0.131]
woman only	0.147**	0.052	[0.046, 0.248]
neither partner	0.210*	0.092	[0.030, 0.391]
Ln roomstress	0.130*	0.060	[0.012, 0.247]
Arrears	0.280***	0.063	[0.157, 0.404]
Cohabiting	0.327***	0.047	[0.235, 0.419]
arrears x cohabiting	–0.239*	0.098	[–0.431, –0.047]
Constant	–1.301***	0.124	[–1.543, –1.059]
N	35657		
Log-pseudolikelihood	–2781.523		
McFadden's pseudo-r2	0.124		
AIC (degrees of freedom)	5651.047 (43)		

Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$. AIC = Akaike's Information Criterion. 95% CI = 95% confidence interval. Model also controls for the variables in Model 4 (parameters very similar so not shown).

In addition to housing, the models in Tables 4 and 5 support previous studies by demonstrating how other demographic and socioeconomic couple-level factors are linked to the propensity to separate. Separation is more likely for couples without the shared commitments of marriage or joint coresident children than for their less committed counterparts. However, the wide confidence intervals on the joint children coefficients indicate that these are imprecise estimates that do not meet conventional levels of statistical significance. Younger ages at partnership formation, previous marriages, and living with children from previous relationships all increase the risk of partnership dissolution (Lyngstad and Jalovaara 2010). The risk of separation is higher for couples where neither partner has bachelor degree level qualifications than for couples where both partners possess degrees or an equivalent qualification. In line with New Home Economics models and the housing contract results, greater female independence proxied by higher relative age and a larger share of couple labour income also predicts separation. Support is also found for hardship models positing that economic difficulties undermine partner relationships (Killewald 2016). Finally, the regional controls suggest that the risks of separation are particularly low in Northern Ireland, which may reflect the higher levels of religiosity in this part of the UK (ONS 2017b).

5. Conclusion

Demographic scholarship linking partnership dissolution with housing dynamics has lagged behind research connecting housing conditions to fertility, migration, and health outcomes. When connections have been made between housing and relationship stability, separation has often been treated as an exogenous life event that has adverse impacts on housing careers and especially homeownership attainments (Dewilde 2008; Feijten and van Ham 2010). In this paper we argue that the reverse relationship is also relevant as several dimensions of housing conditions are influential antecedents of separation (Krapf and Wagner 2015; Lauster 2008). Understanding these antecedents is important as ongoing transformations in housing systems (for example declining levels of homeownership and intense housing affordability pressures in parts of many countries) could have ramifications for family stability, the life course development of children, and other demographic processes (Graham and Sabater 2015).

The results suggest that legal, budgetary, and dwelling-based dimensions of housing circumstances are associated with the relative risk of separation from coresidential partnerships. Furthermore, the magnitude of these associations is in line with many far more intensively studied predictors of partnership dissolution, such as gendered labour force status, hardship or having separated parents (Amato and DeBoer

2001; Lyngstad and Jalovaara 2010; Killewald 2016). Where greater relative levels of housing insecurity among renters may engender greater levels of stress and partnership instability, we find that homeowners have a much lower risk of separation than social and, to a lesser extent, private tenants. Of course, it is likely that selection processes are also at work whereby people in less secure 'trial' relationships disproportionately select into more flexible rental housing (Lersch and Vidal 2014). As such, it remains difficult to form compelling conclusions with regard to the effects of tenure flexibility/insecurity. Future empirical research might explore the utility of simultaneous equations approaches (see Steele 2008) as a strategy to 'control' for such selectivity. Alternatively, by treating selection as a substantively interesting topic in itself, these competing explanations could be the focus of in-depth qualitative analysis, potentially enabling us to gauge the effects that delayed and increasingly unequal transitions to homeownership are having on partnership dynamics and trajectories.

Moreover, despite not being the focus of this study, the characteristics and conditions associated with different tenure groups are sure to vary across increasingly divergent local and regional housing markets. While we included regional fixed effects, and tested a number of different types of regional housing-market geographies, a larger and more geographically extensive sample is required for sufficiently detailed geographical analysis. Population registers and multilevel statistical approaches could prove very useful in this regard, especially if conceptually appealing housing-market geographies can be linked to microdata.

The links between housing contracts and partnership dissolution are particularly interesting and also less likely to be influenced by unobserved selection. 'Ceteris paribus,' the relative risk of separation is highest among couples where neither partner is written into the housing contract. This could be due to the precarious and often transitory nature of this housing situation. The subsequent risk of separation is also considerably higher when the woman is the sole owner/renter than when both partners or only the man are written into the housing contract. Despite receiving little to no attention in previous studies of separation risks, this substantive pattern fits very closely to the New Home Economics perspective and the notion that greater female economic independence reduces the disincentives women face to ending unhappy relationships. As women have been shown to more often initiate divorce than men (Brinig and Allen 2000; Hewitt, Western, and Baxter 2006), bringing gendered property rights and perceptions of housing security into models of partnership stability may thus help us to better understand how access to resources, other than income, influence partnership dynamics and decision-making. Indeed, research into partners' gendered residential adjustments at separation needs to consider the possibility that gendered housing rights could influence not only inequalities in the outcome of separation, but also the decision-

making processes determining which couples actually split up in the first place (Lersch and Vidal 2014).

As a final and particularly important contribution, our results suggest that housing payment arrears have independent links to separation that are not just channelled through general economic hardship (Pleasence and Balmer 2012). Even after controlling for perceived financial difficulties, being behind with one's rent or mortgage payments is associated with a substantial increase in separation risk among British couples. Moreover, and contrary to our expectations, we find housing arrears to be a particularly potent predictor of separation for married couples. We suggest that normative expectations for economic and residential stability make the experience of arrears less acceptable for married couples than those in cohabiting partnerships. It would be useful to have follow-up studies examining the reliability of this finding and, if subsequently observed, work determining the mechanisms underpinning it.[15] The particular importance of arrears may well arise from housing's fundamental role within everyday life and people's perceptions of 'ontological security.' Indeed, the centrality of housing to most people's lives means that any threats to residential security probably create significant stress, harm well-being, generate couple conflicts and hence reduce the quality of partner relationships (see Taylor, Pevalin, and Todd 2007). This is a troubling prospect as a large proportion of British households – especially those that are younger and poorer – currently have sizable consumer and student debts, and many also spend a significant proportion of their post-tax incomes on housing (particularly rent payments). It is not too far-fetched to envisage a scenario where further rent inflation and/or a hike in interest rates combines with reduced public welfare provision and anaemic income growth to push more couples into arrears, thereby fuelling partnership instability.

While coresidential separation can be a positive life event in enabling people to exit unhappy relationships, the vast body of existing work on partnership dissolution demonstrates that it also often has deleterious impacts on life course development, prosperity, and well-being. Bidirectional connections between housing 'precarity' and family instability are therefore worthy of further research to better understand the recursive and uneven links between demographic change and the restructuring of housing systems.

[15] For instance, path analysis and structural equation models could also be used to examine whether the association between arrears and separation is mediated by levels of communication between partners.

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Appendix

Table A-1: Probit models of separation with correction for sample selection

Variable	Model			Arrears x cohabitation interaction		
	Coeff.	SE	95% CI	Coeff.	SE	95% CI
Separation model						
Ln partnership duration	–0.229***	0.024	[–0.276, –0.183]	–0.227***	0.020	[–0.267, –0.187]
Tenure (ref. homeownership)						
social rent	0.130*	0.054	[0.024, 0.236]	0.134*	0.054	[0.029, 0.239]
private rent	0.097	0.050	[–0.002, 0.195]	0.093	0.050	[–0.006, 0.191]
Housing contract status (ref. both)						
man only	0.026	0.055	[–0.081, 0.133]	0.026	0.055	[–0.081, 0.133]
woman only	0.149**	0.053	[0.046, 0.252]	0.150**	0.052	[0.049, 0.252]
neither partner	0.227*	0.093	[0.045, 0.409]	0.226*	0.092	[0.046, 0.406]
Ln roomstress	0.134*	0.060	[0.016, 0.252]	0.133*	0.060	[0.015, 0.251]
Arrears	0.178***	0.052	[0.075, 0.280]	0.267***	0.063	[0.143, 0.390]
Cohabiting	0.288***	0.045	[0.200, 0.377]	0.324***	0.047	[0.232, 0.416]
arrears x cohabiting				–0.225*	0.097	[–0.416, –0.034]
Age at union form~25	–0.020***	0.003	[–0.026, –0.013]	–0.020***	0.003	[–0.026, –0.013]
Age gap between partners (ref. similar)						
man > 5years older	–0.007	0.044	[–0.094, 0.080]	–0.008	0.044	[–0.094, 0.079]
woman > 5 years older	0.223**	0.082	[0.061, 0.384]	0.225**	0.082	[0.064, 0.385]
Country of birth (ref. both UK)						
man overseas	–0.062	0.080	[–0.219, 0.094]	–0.067	0.080	[–0.224, 0.089]
woman overseas	0.139*	0.067	[0.008, 0.270]	0.137*	0.067	[0.005, 0.268]
both overseas	–0.133	0.069	[–0.267, 0.001]	–0.138*	0.069	[–0.272, –0.003]
Joint coresident children (ref. none)						
youngest aged < 5 years	–0.076	0.052	[–0.179, 0.026]	–0.075	0.052	[–0.177, 0.026]
youngest aged ≥ 5 years	–0.032	0.055	[–0.139, 0.075]	–0.031	0.055	[–0.139, 0.076]
Other coresident children	0.129*	0.056	[0.018, 0.239]	0.132*	0.056	[0.022, 0.243]
Previously married	0.123*	0.051	[0.023, 0.223]	0.121*	0.051	[0.021, 0.221]
Education (ref. neither has degree)						
man has degree	–0.028	0.062	[–0.149, 0.093]	–0.025	0.062	[–0.147, 0.096]
woman has degree	0.002	0.056	[–0.108, 0.113]	0.002	0.056	[–0.108, 0.112]
both have degrees	–0.118*	0.058	[–0.232, –0.005]	–0.117*	0.058	[–0.230, –0.004]
Woman's share of labour income (ref. < 40%)						
40–60%	0.027	0.041	[–0.052, 0.107]	0.027	0.040	[–0.052, 0.106]
> 60%	0.155**	0.049	[0.058, 0.251]	0.152**	0.049	[0.056, 0.248]
Financial situation (ref. alright or better)						
getting by	0.142***	0.042	[0.060, 0.224]	0.140***	0.042	[0.059, 0.222]
difficulties	0.220***	0.053	[0.115, 0.324]	0.214***	0.053	[0.110, 0.318]
Region (ref. South East)						
North East	–0.095	0.098	[–0.288, 0.097]	–0.092	0.097	[–0.283, 0.099]
North West	–0.026	0.068	[–0.160, 0.108]	–0.026	0.068	[–0.159, 0.108]
Yorkshire and the Humber	–0.080	0.076	[–0.229, 0.068]	–0.080	0.075	[–0.226, 0.067]
East Midlands	–0.043	0.079	[–0.197, 0.111]	–0.043	0.078	[–0.197, 0.110]
West Midlands	–0.129	0.080	[–0.285, 0.027]	–0.125	0.079	[–0.281, 0.030]
East of England	0.000	0.075	[–0.147, 0.147]	0.003	0.075	[–0.144, 0.149]
London	–0.024	0.072	[–0.166, 0.117]	–0.028	0.072	[–0.169, 0.113]
South West	0.039	0.075	[–0.108, 0.185]	0.039	0.075	[–0.108, 0.186]
Wales	–0.027	0.087	[–0.198, 0.144]	–0.030	0.087	[–0.200, 0.140]
Scotland	–0.026	0.082	[–0.186, 0.135]	–0.025	0.082	[–0.185, 0.135]
Northern Ireland	–0.280*	0.122	[–0.518, –0.042]	–0.281*	0.121	[–0.518, –0.043]

Table A-1: (Continued)

Variable	Model Coeff.	SE	95% CI	Arrears x cohabitation interaction Coeff.	SE	95% CI
Separation model						
Survey wave (ref. wave 1)						
wave 2	0.002	0.053	[–0.101, 0.106]	0.003	0.052	[–0.099, 0.105]
wave 3	0.056	0.056	[–0.055, 0.167]	0.056	0.056	[–0.053, 0.166]
wave 4	0.095	0.057	[–0.018, 0.207]	0.094	0.057	[–0.017, 0.206]
wave 5	0.170**	0.058	[0.056, 0.283]	0.172**	0.058	[0.058, 0.285]
wave 6	0.027	0.067	[–0.104, 0.159]	0.029	0.067	[–0.102, 0.160]
Constant	–1.247***	0.143	[–1.528, –0.966]	–1.271***	0.125	[–1.516, –1.026]
Selection model						
Ln partnership duration	0.027	0.015	[–0.002, 0.056]	0.027	0.014	[–0.001, 0.055]
Age (ref. 35–54)						
under 35	–0.088**	0.027	[–0.140, –0.035]	–0.088***	0.027	[–0.140, –0.036]
55 or older	0.053	0.030	[–0.006, 0.113]	0.054	0.030	[–0.006, 0.113]
Both born overseas	–0.139***	0.033	[–0.204, –0.074]	–0.139***	0.033	[–0.204, –0.074]
Cohabiting	–0.001	0.027	[–0.055, 0.052]	–0.002	0.027	[–0.055, 0.051]
Joint coresident children (ref. none)						
youngest aged < 5 years	0.149***	0.030	[0.090, 0.208]	0.149***	0.030	[0.090, 0.208]
youngest aged ≥ 5 years	0.050	0.028	[–0.004, 0.105]	0.051	0.028	[–0.004, 0.105]
Education (ref. neither has degree)						
man has degree	0.132***	0.032	[0.070, 0.194]	0.132***	0.031	[0.070, 0.194]
woman has degree	0.168***	0.031	[0.107, 0.229]	0.168***	0.031	[0.107, 0.229]
both have degrees	0.224***	0.027	[0.171, 0.278]	0.224***	0.027	[0.171, 0.278]
Tenure (ref. homeownership)						
social rent	–0.051	0.030	[–0.109, 0.006]	–0.051	0.029	[–0.109, 0.006]
private rent	–0.232***	0.029	[–0.289, –0.176]	–0.233***	0.029	[–0.289, –0.176]
Ln roomstress	–0.114***	0.030	[–0.173, –0.055]	–0.114***	0.030	[–0.173, –0.055]
Region (ref. South East)						
North East	0.070	0.054	[–0.035, 0.176]	0.070	0.054	[–0.035, 0.175]
North West	–0.032	0.037	[–0.105, 0.042]	–0.032	0.037	[–0.105, 0.041]
Yorkshire and the Humber	0.002	0.041	[–0.079, 0.083]	0.001	0.041	[–0.080, 0.082]
East Midlands	0.082	0.042	[–0.001, 0.165]	0.082	0.042	[–0.001, 0.165]
West Midlands	–0.010	0.040	[–0.089, 0.069]	–0.010	0.040	[–0.089, 0.069]
East of England	0.022	0.040	[–0.057, 0.101]	0.022	0.040	[–0.057, 0.101]
London	–0.077*	0.039	[–0.154, –0.001]	–0.078*	0.039	[–0.154, –0.002]
South West	0.063	0.042	[–0.018, 0.145]	0.063	0.042	[–0.018, 0.145]
Wales	–0.077	0.048	[–0.172, 0.018]	–0.077	0.048	[–0.172, 0.018]
Scotland	–0.156***	0.042	[–0.239, –0.073]	–0.156***	0.042	[–0.239, –0.074]
Northern Ireland	–0.086	0.050	[–0.184, 0.011]	–0.086	0.050	[–0.184, 0.011]
Survey wave (ref. wave 1)						
wave 2	0.068**	0.026	[0.017, 0.119]	0.068**	0.026	[0.017, 0.119]
wave 3	0.292***	0.030	[0.234, 0.350]	0.292***	0.030	[0.234, 0.350]
wave 4	0.426***	0.033	[0.362, 0.489]	0.426***	0.033	[0.362, 0.489]
wave 5	0.162***	0.031	[0.101, 0.222]	0.162***	0.031	[0.102, 0.222]
wave 6	0.326***	0.034	[0.258, 0.393]	0.326***	0.034	[0.258, 0.393]
Ethnic Minority Boost sample	–0.096**	0.035	[–0.164, –0.028]	–0.096**	0.035	[–0.164, –0.028]
Suspicious of survey	–0.280***	0.030	[–0.339, –0.221]	–0.280***	0.030	[–0.339, –0.221]
Prefers to move	–0.110***	0.019	[–0.147, –0.072]	–0.110***	0.019	[–0.147, –0.072]
Constant	0.950***	0.081	[0.790, 1.109]	0.951***	0.080	[0.794, 1.108]
rho	0.609	0.583	[–0.803, 0.987]	0.781	0.227	[–0.090, 0.975]
N	35657			35657		

Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$. 95% CI = 95% confidence interval. Cluster robust standard errors.