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The Price of Youth: Income and Age-Hypergamy

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The Price of Youth: Income and Age-Hypergamy*

Abstract

This paper focuses on the role of age gaps and income in the mating process. We test the predictions of different theories of age heterogamy using a French exhaustive administrative database of newly formed same-sex and heterosexual couples. In both heterosexual and male same-sex couple formation, the age gap between the richer and poorer partner, as well as the likelihood of an extreme age gap, increases with the income of the richer male partner, especially when he belongs to the top income decile. By contrast, women, even when they rank high in the income distribution, are usually matched with an older partner. Women are found to mate with a younger partner in only one specific case: above age 60, when they provide at least 75% of household income or rank higher than their partner in the distribution of income within their respective age group. The marriage market thus seems to be best described by exchange theory, mitigated by a remnant of traditional norms. In a sense, the price of youth depends on the sex of the buyer.

JEL classification

J12, J16, Z13

Keywords

age gap, age-hypergamy, couple formation, mating criteria, same-sex couples, marriage market

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1 Introduction

Age-heterogamy among heterosexual couples is a very stable feature of human societies, with a predominance of man-older couples, also known as “age-hypergamy”, as opposed to age-hypogamy for older-women couples (Casterline *et al.*, 1986; Hancock *et al.*, 2003; Presser, 1975; Kemkes-Grottenthaler, 2004; Mignot, 2010; Ní Bhrolcháin, 1992). In modern societies, the age difference at first heterosexual marriages is still about 2 or 2.5 years – to the advantage of the man. In second and third marriages, the significance of which has been increasing over time since the 1970s, this age gap is wider, especially as the age of the man increases (England and McClintock, 2009; Esteve *et al.*, 2009; Silva and Persheski, 2022; Feighan, 2018). In OECD countries, age-hypergamous couples with a gap of more than 10 years represent about 8% of all couples, and 2% of couples have a gap of more than 15 years (Bergström, 2018); however, this ratio has been increasing over the last three decades, particularly in the upper part of the income distribution (Kolk, 2015).

In this paper, we focus on the age difference among newly formed couples, with a special interest in extreme age-heterogamy, i.e. the formation of couples with at least 10 age difference. We are particularly interested in the role of each partner’s individual income in the matching process.

Most theories represent mating as a search process in which each person (or their parents) seeks a partner endowed with some desirable features. A union then forms when both partners derive a utility surplus from doing so. This general idea has been formalized by Gary Becker’s seminal theory of marriage (1973; 1981) as starting with a matching process on a “marriage market”¹ (see also Weiss, 1997).

However, this framework does not contain any univocal predictions concerning age-homogamy or heterogamy. Becker himself, for example, discusses the possibility that age is part of the *positive assortative mating traits* (together with education, culture, ethnicity, intelligence, lifestyle, etc.), for which there is complementarity between spouses and that are associated with greater marital quality and stability. By contrast, negative assortative mating traits, such as earnings potential (wages), are substitutable between spouses due to the advantage of specialization in paid work versus housework.

¹“Two simple principles form the heart of the analysis. The first is that, since marriage is practically always voluntary, either by the persons marrying or their parents, the theory of **preferences** can be readily applied, and persons marrying (or their parents) can be assumed to expect to raise their utility level above what it would be were they to remain single. The second is that, since many men and women compete as they seek mates, a **market in marriages** can be presumed to exist. Each person tries to find the best mate, subject to the restrictions imposed by market conditions. Hence, based on these simple principles of rational choice, future partners do their best to select each other based on traits that will be favorable to the marriage quality” (Becker (1973), p. 814)

But marriage models can accommodate different types of hypotheses about people's preferences regarding the age of their partner. We here ask about people's mating preferences regarding age: is age a matter of positive or negative assortative mating? Several theories in social science and psychology assume asymmetric mating preferences, in the sense that both partners agree on negative assortative mating. These include biological and socio-biological theories that emphasize fertility motives as a basis for age-hypergamy, as well as sociological theories where age-hypergamy is part of patriarchal domination. By contrast, economic models of the marriage market can accommodate symmetric age-related preferences, where youth and money (among other traits) constitute two positive features of candidates in the marriage market, in the eyes of both men and women.

Our objective is to test these competing views regarding age-heterogamy. We use a French exhaustive database that contains all same-sex and heterosexual couples formed in 2019 (*Fideli, 2020*). The presence of same-sex couples - an unusual feature of most available data- allows challenging the reproduction or "patriarchal" rationale for age-dissimilarity in couple formation. On the other hand, our focus on newly formed couples ensures that partners' incomes are exogenous to further marital decisions. This contrasts with most existing research that analyzes populations of established couples, given the difficulty that many of the partners' observed characteristics —income, for example— are endogenous to decisions that are taken during the course of marriage.

Descriptive statistics show that age gaps are wider, and extreme age gaps are more likely among same-sex couples than among heterosexual couples. In addition, age gaps and the likelihood of extreme age gaps are highest in couples where the younger partner is a woman over her 40s. These observations contradict the predictions of the socio-biological view. If fertility is the dominant driver of age-heterogamy, the latter should be much less prevalent among same-sex couples, especially among gay couples, for whom reproduction and adoption remain rare.

Our main interest lies in the relationship between income and age as mating criteria. It turns out that among heterosexual couples, the average age gap and the likelihood of an extreme age gap increase with the income of the male partner, especially when he belongs to the top income decile or top percentile; in summary, they are higher in couples where the male partner is richer and older. The same patterns (where the richer mate is older) hold for gay couples, but less so among lesbian couples, and not at all for woman-richer heterosexual couples.

Within man-older heterosexual couples, the proportion of extreme age gaps increases by 42 percentage points (from 7% to 10%) as the richer (male) partner moves from the 90th to the 98th income percentile. In gay couples, this proportion increases from 9% to 13%. Naturally, these proportions are higher for heterosexual and gay men aged 60 and older: up to 20% in the top income decile. The age gap between partners also depends on the income gap. The proportion of couples with an age gap of more than 10 years doubles from 5% to 10% as the contribution of the richer partner increases from 50% to 90% and above, except for women-richer heterosexual couples, where this proportion remains low, in the vicinity of 2.5%. When the female partner is older and richer than her male partner, the age gap can be large (10 years or more) only if she contributes at least 75% of the household income.

These findings lend support to both the market exchange and patriarchal theories, as it seems that men and women do trade youth against income, but not along the same terms of trade.

2 Literature

2.1 Theories of mating preferences

This paper is part of the literature dedicated to the matching process in a 'marriage market', where potential partners search for a mate with desirable features and match when a surplus of utility can be expected. In this literature, three main views on mating criteria prevail.

The simplest and perhaps most prominent one posits that reproduction is the main objective pursued by both partners. Because their fecundity declines rapidly with age, women need to marry young. In contrast, men's fertility declines at a slower rate, which allows them to extend their search period and reject the proposals of less fertile older women. The mating process thus naturally leads to the formation of age-hypergamous couples (see, for example, Díaz-Giménez and Giolito, 2013). The fertility motive can be instinctive or conscious, as suggested by (Gershoni and Low, 2021).²

A variant of the pure biological theory is developed by evolutionary socio-biologists or evolutionary psychologists. Again, these theories assume that mating is mainly driven by a biological script aimed at favoring reproduction. But here, both the asymmetry of women and men's windows of fertility and of their social positions drive the age gap. Since men's value in the marriage market depends on their ability

²The authors show that the adoption of free in vitro fertilization in 1994 in Israel led to an increase in the average age of women at first marriage.

to provide material resources for the development of children, and because income and wealth generally increase with age, it naturally follows that the ideal match is between a young and fertile woman and a rich man, hence an older man. In this socio-biological view, age-hypergamy is thus the result of a match based on partners' asymmetric preferences (Buss and Barnes, 1986; Buss, 1989, 1994; Buss and Schmitt, 1993; Kenrick and Keefe, 1992; Greenlees and McGrew, 1994; Díaz-Giménez and Giolito, 2013). Note that such mating models need not assume that men are the only ones who care about physical attractiveness and youth, or that income is only valued by women: these traits may be seen as positive by both men and women, albeit with different relative weights.

These views can be integrated into economic models of the marriage market if their foundational hypothesis is adopted, i.e., the utmost importance of reproductive traits as a matching criterion. For example, in Bergstrom and Bagnoli (1993), the age gap at first marriage relates to the traditional sex specialization of economic roles: men provide income, whereas women provide children. Marriage is then viewed as a waiting game in which older and richer men outbid younger, poorer men in their competition for younger, potentially fertile women, who are relatively scarce and choosy (see also Siow, 1998; Díaz-Giménez and Giolito, 2013).

As the previous example illustrates, sociobiological models of asymmetric preferences explicitly assume traditional gender roles, with breadwinner men and care-giver women. Admittedly, it is still the case, even in modern developed societies, that men are usually wealthier than women and that women devote much more time than men to housework and childcare. These interpretations would predict that age-hypergamy recedes in modern societies, where women have gained financial independence by participating in the labor market, where gender earnings gaps have decreased, and where couples have a much smaller number of children, which diminishes the importance of fertility as a matching criterion (Coles and Francesconi, 2011; Mignot, 2010; Gustafson and Fransson, 2015; Atkinson and Glass, 1985; Van Poppel *et al.*, 2001). *De facto*, the average age gap tends to be smaller in gender-equal countries (Casterline *et al.*, 1986; Mignot, 2010; Díez Minguela, 2011; Ní Bhrolcháin, 1992).

It is difficult to distinguish socio-biological theories from sociological patriarchal domination theory (also known as social structure theory or social role theory, as in Eagly and Wood (1999), which posits that gender culture is a social construct and that spouses' asymmetric preferences reflect patriarchal domination that has been internalized by both men and women in the form of stereotypical gender roles.) Age is then viewed as a marker of social status and authority, so that hypergamous couples express or enact men's social

superiority. As put by sociologists such as Bozon (1990a,b), women "consent to domination" when they share the preference for an older male partner. Such patriarchal norms may reflect the persisting effect of biological evolution, i.e., hard-wired preferences that were adaptive in the early stages of humanity and have remained ingrained (England and McClintock (2009)). As shown by cultural economics (Fernández, 2011), social scripts may persist even after their initial biological or economic foundations have disappeared, so that hypergamous *macho* mating criteria may continue to prevail even though they have lost their *raison d'être*.

Finally, different mating behaviors can be expected following market exchange theory, in line with Becker (1973), if youth and money are both viewed as valuable traits in the marriage market, independently of the fertility motive.

Grossbard (2014)'s work on compensating differentials, for example, draws an analogy between marriage markets and labor markets. Just as less desirable jobs must offer higher wages to attract workers, less desirable marriage partners must offer greater compensation to attract spouses. In particular, Grossbard (2014) predicts that an older man (as someone with less desirable characteristics) will "compensate" his younger wife through greater material resources or other benefits, compared with what he would have to transfer to a woman close to his own age. In economic terms, Grossbard's "trophy wife" concept refers to a marriage market equilibrium where higher material benefits (stemming from higher income and status) offset the less desirable characteristics of one partner (here being older) in exchange for the youth and attractiveness of his spouse.

Grossbard has provided several illustrations of such trade between youth—seen as a desirable trait in the marriage market—and material advantages. In the context of a polygynous society in Nigeria, she showed that women at their peak age of fecundity were able to secure a more exclusive marital arrangement (Grossbard, 1976). On the Israeli marriage market, she showed that women substantially younger than their husband were less likely to participate in the labor market (Grossbard-Shechtman and Neuman, 1988). In the same vein, Woolley (2003) showed that Canadian women who are younger than their husband are more likely to hold greater control over the couple's finances.

Within this framework, *a priori*, a marriage could form on the basis of an exchange of money for youth or beauty, regardless of which sex tends to be richer or older (Coles and Francesconi (2011); Bloemen and Stancanelli (2015)). Because, *de facto*, men are still on average richer than women, age-hypergamous

couples will be more frequent than the reverse; however, this need not reflect an asymmetry in men and women's mating preferences.

Other studies have documented examples of matches in the marriage market that are not necessarily related to the age-income trade-off. Chiappori *et al.* (2012), for example, show that a higher wage for men or an additional year of education for women can compensate for a larger BMI. Other studies have suggested that although people have a preference for age similarity (which provides better marriage quality and stability), they are sometimes constrained to form age-dissimilar couples in order to compensate for "lower quality" traits or traits that restrict their mating pool (Mansour and McKinnish, 2014; Berardo *et al.*, 1993; Larson and Holman, 1994; Stevenson and Wolfers, 2007; Choo and Siow, 2006).

In sum, the literature on age-hypergamy offers two not completely distinct lines of interpretation: (1) biology, socio-biological reproductive strategies, and macho norms (persisting preference for male domination), and (2) trade. The first one assumes asymmetric mating preferences, whereas the second does not. As previously discussed, they are often observationally equivalent in the sense that, in the current social context, they lead to many similar predictions. However, some of their predictions differ. Biological and socio-biological theories predict the formation of heterosexual man-richer age-hypergamous couples with a young and fertile female partner. Patriarchal theory predicts the formation of age-hypergamous couples without reference to fertility. Trade theory, on the other hand, predicts a large proportion of either same-sex or different-sex couples where the richer mate is also the older one, including heterosexual couples where the woman is richer and older than her partner.

2.2 Direct evidence on the search process

Empirical research on mating criteria is usually based on demographic data, where one can only observe already formed couples but not the mating criteria or the mating process. There are, however, exceptions to this rule. For instance, two surveys of the French population, conducted in 1983 and 2013, asked respondents whether they would accept a match with certain age gaps. Women were initially less open than men to a union in which they would be at least 5 years older than their male partner; although the acceptance rate of such matches increased dramatically for both men and women during the period considered (Bergström, 2018). Buunk *et al.* (2001) ran a survey concerning optimal partner ages and found that women preferred partners of their own age, whereas men preferred mates who were younger than them.

A new source of direct empirical evidence on mating preferences has recently been provided by data from internet and digital dating devices. As it turns out, men and women's explicit preference for age-hypergamous unions does not appear as clearly from these sources as would be suggested by actual unions. It is true that even on digital devices, people may not express their true aspirations, as they need to be realistic, and hence act strategically to a certain extent. We thus interpret the results of these studies as shedding (some) light on the search process.

Using on-line dating data, Hitsch *et al.* (2010) found that both men and women are more likely to contact partners of similar age, although both men and women avoid pairings in which the woman is older than the man. Bergström (2018) analyzed the desired age range declared by users of *Meetic*. She found that the preferences of women and men are similar, but not identical. As people age, their desire for a younger partner becomes stronger, but this tendency is more pronounced for men. Young women prefer older men only until they are 35 years old, whereas men start looking for younger women as they age. The author also examines actual contacts made on *Meetic* via email: there, men are on average 2.4 years older than female users, which is very close to the age gap of actual unions in France. Again, at younger ages, men contact both older and younger women, but as they grow older, they show increasing interest in younger women. Among female users, the opposite is true. Women largely contact older men until their forties, but they also contact younger users after this age. Hence, over time, both men and women develop a preference for younger partners as they age. Eventually, actual encounters tend to align more closely with men's preferences. Belot and Francesconi (2013) analyzed data from speed dating events and found that both women and men prefer partners of similar age, height, and education (women prefer men who are young and tall, while men are more attracted to women who are young and thin). However, both men and women prefer dates where the man is up to five years older, rather than dates where he is more than five years older or where the man is younger than the woman. Thus, they agree on a limited form of age-hypergamy.

A recent experiment on real online daters aged 30-40 (Low, 2024) finds that for every year a woman ages, she must earn \$7,000 more annually to remain equally attractive to potential male partners. This preference is present only for men without children who have accurate knowledge of the age-fertility trade-off. These fascinating results, however, apply to a population group that, by definition, is potentially concerned with fertility.

In summary, studies on the search process based on speed dating and digital dating devices suggest that both men and women express a preference for a partner within the same age band (see also Kurzban and Weeden, 2005), although some asymmetry exists, namely a slightly greater tolerance for man-older couples.

2.3 Mating criteria among same-sex couples

Concerning same-sex couples, empirical evidence — both descriptive and estimated through structural matching models —reveals that same-sex couples are less likely to exhibit positive assortativeness with respect to a variety of traits, including age, education, and racial and ethnic background. This finding is reproduced in several studies based on data from different OECD countries (Jepsen and Jepsen, 2002; Andersson *et al.*, 2006; Schwartz and Graf, 2009; Verbakel and Kalmijn, 2014; Ciscato *et al.*, 2020; Lengerer and Schroedter, 2022; Verbakel and Kalmijn, 2014). In all these countries, gay couples are more likely to be heterogamous in age and education than other types of couples.

The question is whether this lower assortativeness reflects specific mating preferences of same-sex couples or demographic constraints. On the side of demographic constraints, as pointed out by Ciscato *et al.* (2020), because homosexual partners are drawn from the same population, positive assortative mating preferences would lead to couples with very similar characteristics, including a small age gap. On the other hand, homosexuals may be forced to choose from a restricted pool with fewer meeting opportunities and a lower likelihood of encountering a partner of the same age (or generally with the same traits). Scarcer positive assortative mating would then reflect demographic scarcity constraints rather than mating preferences (Kalmijn, 1994; Noack *et al.*, 2005; Andersson *et al.*, 2006; Schwartz and Graf, 2009; Rosenfeld and Thomas, 2012; Verbakel and Kalmijn, 2014; Ciscato *et al.*, 2020).

On the subject of preferences, it has been argued that homosexuals may have weaker preferences for homogamy, which is a trait of conventional culture. However, they may also prefer homogamous unions that are well-suited to egalitarian divisions of household tasks (Verbakel and Kalmijn, 2014).

Finally, homosexuals frequently move to large cities. On the one hand, the pressure for conformity is weaker in such surroundings, and a larger city also means a more diverse crowd, favoring age-heterogamy. On the other hand, a large city also provides a larger meeting pool, hence an improved possibility of finding a person of the same age range.

A recent paper by Marcen and Morales (2025) shows that the spread of local coverage of Fiber-to-the-Home in Spain is associated with a higher crude marriage rate at the municipal level,

particularly for same-sex marriages. However, this came with improved positive assortative mating for different-sex couples, but not for same-sex couples. These observations tend to support the interpretation in terms of preferences rather than demographic constraints (for same-sex couples).

We will take these identification caveats into account in our analysis by distinguishing between regions (*départements*) that contain a very large city, hence access to a large mating pool, and those that do not.

Let us underline that, to date, among these different streams of research on mating criteria, no study prior to ours has ever considered together the age gap, income gap, gender, and sexual orientation of future partners.

2.4 Hypotheses

The different theories listed above lead to distinct predictions regarding the age gap within newly formed couples.

Pure biological theory

In view of the pure biological theory, where mating criteria are driven by fertility motives, we would expect that:

(H1) Age-hypergamy should be found more often amongst heterosexual couples with a fertile woman (under 40).

Socio-biological and patriarchal theories

The prediction of socio-biological and patriarchal theories is as follows:

(H2) The richer a man is, the younger his female partner tends to be.

We thus expect to observe more age-heterogamous couples among man-older heterosexual couples, with a relatively wealthy man.

As mentioned, mating preferences may reflect the inherited persistence of socio-biological motives, even after the issue of fertility has lost importance and women have gained financial independence. We thus expect to find mostly man-older couples, even when the female partner is richer or is no longer fertile.

Pure exchange theory

Finally, the prediction of the pure exchange theory (exchange between age and income) would be:

(H3) The age gap and income gap should be positively correlated.

The richer partner should also be the older one, regardless of the type of couple, i.e., same-sex or heterosexual, whether in man-richer or woman-richer couples.

Note that as income is measured at the moment of couple formation, it is not yet endogenous to marital specialization choices.

3 Data and Methods

This paper is based on an analysis of the universe of couple formation in France in 2019, including heterosexual and same-sex couples. We ask whether this information lends support to either of the aforementioned theories regarding age as a mating criterion. Although we endeavor to test the predictions of these different theories, our approach remains empirical and descriptive. We do not estimate a structural model along the lines of Ciscato *et al.* (2020), for instance. This is partly because we do not have the necessary information to estimate such models, such as education and occupation. Nevertheless, the findings we uncover, although derived from a "reduced-form" model, are sufficient to provide answers to our questions.

3.1 Data

We use an exhaustive administrative database, *Fideli 2020*, that contains the universe of French households and matches information from the tax administration (housing and income tax return files) for 2018 and 2019. 2019 is not a specific year, either in terms of the economic cycle or political turmoil, and is anterior to the Covid pandemic; hence, it is likely to be representative of the current general patterns of couple formation in France.

Fideli (Fichier démographique sur les logements et les individus, housing and individual demographic files) is a large-scale statistical database produced by INSEE, the French National Institute of Statistics and Economic Studies. It is designed to provide an exhaustive, up to date, demographic description of individuals, households, and dwellings in France by integrating multiple tax administrative sources (income and housing tax) and social security and benefits data. Due to its comprehensive coverage, FIDELI

serves as a sampling frame and a core input for many population-based surveys conducted by INSEE. The database includes demographic variables (age, sex, legal marital status, place of birth, household composition, relationships between individuals belonging to the same household, housing characteristics (type of dwelling, occupancy status, geolocalization at a fine spatial scale), and income variables at both the individual level and the fiscal household level (different sources of incomes, welfare transfers, taxes) for two subsequent years.

We selected only newly formed same-sex and heterosexual couples, defined as those whose partners did not cohabit in 2018 (and at least one member did not cohabit with a partner) and lived together in 2019.³ Cohabiting is defined as belonging to the same housing. Members of these couples can be in a consensual union, married, or having signed a civil partnership contract: PACS. In the latter two cases, they also file a unique income tax return. In case of consensual union, they fill separate tax-returns but they can be identified as a couple because they are listed as living in the same residence.

PACS (Pacte Civil de Solidarité) is a form of civil partnership, a legal union recognized by the French state, created in 1999, and commonly used by both heterosexual and same-sex couples. Couples who contract a PACS benefit from most of the same fiscal dispositions as married couples, in particular joint taxation after one year; they do not automatically inherit but can do so, provided a will has been written in this intention (Service public 2024). The popularity of PACS has increased over time, to the point that, as of 2023, comparable number of people entered a PACS and a marriage (204,061 PACS in 2023 versus 242,000 marriages, see INSEE 2025b).

The relationship between family members is established by INSEE and allows one to identify both different-sex and same-sex couples, even when they are not filling the same tax return (consensual unions). We pay special attention to the risk of measurement errors concerning the identification of couples who are neither married nor in a civil partnership. First, we asked INSEE to evaluate the risk of misclassification of gender, by using first names: the risk turned out to be very low. Second, we excluded some observations that we suspected were not 'real' couples (for example, if one person was declared as a child of the respondent in the previous year and did not move). We also screened all couples and dropped those with the 2% largest age gaps (greater than 20 years), which could correspond to a household formed by a parent and a child.⁴ Finally, we conducted a robustness check of our results by restricting our sample to couples who file a unique

³In most cases, both partners were not in another cohabiting relationship in the previous year.

⁴Note that this risk of error is limited to the case of a co-resident adult child who would live with a lone parent and fill a separate tax return. Otherwise, resident children are registered on one of the tax returns of their parent as a dependent adult child.

income tax return, i.e., married or PACSed couples, for whom there is no suspicion that the respondents are flatmates rather than partners.

To capture the size of the mating pool available to individuals, we construct a binary indicator ("urban") equal to 1 for households located in a *département* that includes one of the five largest French cities (Paris and its three adjacent "*départements*" - also called *la petite couronne*; Marseille; Lyon; Bordeaux; and Toulouse). Our data identify the municipality of residence but not local population size, and this *département*-level definition is therefore our best available proxy. This measure is admittedly imperfect; however, municipality-level population data would also be limited, since many individuals work and socialize beyond their municipality of residence.

Our regression sample contains 451,441 couples, including 21,042 same-sex male couples (4.66% of all newly formed couples), 17,069 same-sex female couples (3.78%), and 413,330 heterosexual couples.

Because we focus on the flow of new unions, our sample is not representative of the stock of all existing couples. This is because some people may be over-represented if they typically form less stable couples and match more frequently. Our analyses thus characterize the flow of all new unions in France in 2019 but cannot be generalized to all existing couples. We attempt to address this issue by distinguishing between first versus higher-order unions and formal versus informal unions, as well as accounting for other sources of selection, such as retirement or widowhood.⁵

In particular, it appears that the proportion of new newly formed same-sex couples in the sample (8.44%) is higher than the share of same-sex couples in the entire stock of couples. This could be due to the greater instability of same-sex couples, as indeed documented, for example, by Marteau (2019) in the case of France (and 5 other European countries). *De facto*, in the entire Fideli sample of couples in France in 2019, we counted 1.07% gay couples and 0.86% lesbian couples. These proportions are lower than in our sample of new couples, but they are in line with the official figures measured by the population Census and the official statistics for France and other OECD countries (Rault 2023). The high proportion of same-sex new unions can also be partly due to the fact that same-sex couples are in average younger (hence with a higher turnover) because their number is on the rise in high income countries (Rault 2023).

Table A1 shows that, in our sample, same-sex couples are indeed in average younger than heterosexual couples. It also shows that the proportion of first marriages is higher among same-sex couples than among

⁵The stock of existing couples also differs from the flow of new ones because it contains couples who were formed at different points of time and have not separated in 2019 - hence a selected sample. However, this is not the object of this paper, which focuses on mating criteria and not on the durability of unions.

heterosexual couples, and that the proportion of new couples who enter a legal marriage (as opposed to a PACS or cohabitation) is three times lower among same-sex couples. The table also shows that the proportion of couples with one or both retired partners is lower among gay couples than among other types of couples.

To be completely transparent about the differences between the sample of new couples that we use and the entire sample of existing couples, in France in 2019, Table 3 in the Appendix, replicates Table 1 for the entire stock of French couples as of 2019. As expected, our sample of newly formed couples is younger, less often legally married or PACSed, a bit less wealthy, less often with children in the household, and less often retired.

Following usual practice, we refer to couples in which the man is older than his female partner as age-hypergamous couples, and those in which the woman is older than her male partner as age-hypogamous couples. For same-sex couples, we will refer to this phenomenon as age-heterogamy or age gap. We then define extreme age-heterogamous couples as those with more than 10 years of age difference. We distinguish four types of couples: woman-richer heterosexual couples, man-richer heterosexual couples, gay couples, and lesbian couples.

3.2 Income categories

As for income, we use the measure of annual individual income available in the data, which sums labor market income (wages and self-employment income), work-related transfers (unemployment benefits and retirement pensions), and taxable wealth income. Wealth income refers to all income streams flowing from accumulated stock, financial capital, or real estate. We calculate the income percentile in which each person belongs among the entire population. We draw specific attention to the top-ten income decile, as this is where most of the action takes place.

Because we are interested in the role of income as a mating criterion and because income generally increases with age, we also use the percentile rank of a person in their cohort, i.e., within the group of people of the same age. We also take into account the fact that the distribution of income differs between male and female populations by considering the percentile rank of male (resp. female) income within the male (resp. female) cohort, as in Ciscato *et al.* (2020). This constitutes a measure of the relative success of a person within her cohort and gender, in the spirit of Becker's theory of mating, whereby the attractiveness of

a person depends on their rank within their own category. We also consider the potential role of the income gap between partners, measured as the contribution of each partner to the household income.

In the figures, for brevity, we use the terms “richer” and “poorer” to indicate which partner has a higher or lower income than the other.

Note that we interpret income as a proxy that captures the different dimensions of social status, i.e., material security and comfort, as well as power, prestige, and influence, which are correlated with income and wealth. Unfortunately, our data do not include information about people’s education, occupation, or other metrics of social success.

It is important to note that our data contain the universe of all newly formed couples, i.e., those with a formal contract such as marriage or PACS, as well as those who simply cohabit. This is because married or PACSed individuals must file a joint income tax return, whereas those who cohabit without any formal contract file separate income tax returns. The prevailing French tax structure is thus likely to influence the choice of union type (as discussed by Allègre *et al.* 2021), but not the decision to live together, i.e., the couple formation process itself. Since we analyze all types of couple formation (marriage, PACS, and cohabitation), we believe that our analysis of the mating criteria of new couples is immune to the influence of the tax system. It is true that some elements of the welfare system may influence people’s decision to cohabit. For example, the amount of the minimum income support, RSA, is adjusted downward for couples, to reflect the economies of scale associated with living together. Single parents who start living with another adult also sometimes risk losing some social transfers such as the ‘allocation parent isolé’ (allowance for single parents), as shown by Allègre *et al.* (2021). However, overall, the magnitude of the losses is likely to be small compared with the returns to scale from living together, and this would only concern the bottom of the income distribution, and not the top where we see most of the action taking place.

3.3 Empirical strategy

We start with descriptive statistics that illustrate the patterns of age gaps in our sample of newly formed couples. We are particularly interested in the relationship between age gap and income. We first present descriptive statistics of the age gap between partners, depending on the age and income of the considered partner and the type of couple. We then focus on the relationship between the income of the richer person in the couple and the age gap with their partner.

As explained, we consider different notions of the income of the richer partner, such as income quantiles (deciles and percentiles), ranks in one's cohort and in one's sex and cohort, and relative income (contribution to household earnings). We look at the association between income and age gap over the entire distribution of income of the richer partner, using these different concepts of income.

We first document these relationships without controlling for any covariates, and then present the estimated associations net of socio-demographic controls.

Our main specification is as follows:

For each couple $i, i = 1, \dots, N(N = 451, 441)$, let:

- AG_i denote the age gap between the richer and the poorer partner
- D_{ni} a dummy equal to 1 iff the richer partner is in the n^{th} income decile, $n = 1, \dots, 9$
- C_{pi} a dummy equal to 1 iff the richer partner is in the p^{th} income percentile, $p = 91, \dots, 99$
- $T_{ki}, k = 1, \dots, 4$, a dummy equal to 1 iff the couple is of type k (1: heterosexual man-richer couple, 2: heterosexual woman-richer couple, 3: gay couple, 4: lesbian couple)
- X_i a vector of controls of household characteristics: rural/urban regional district fixed effects, presence of children in the household, presence of a foreign-born partner, and (10 year band) age category of the couple, or alternatively the age group of the richer partner, and retirement status (for regressions on the entire sample).

We estimate equation 1 below using OLS:

$$\begin{aligned}
 AG_i = & \sum_{n=1,9} \alpha_n \cdot D_{ni} + \sum_{n=1,4} \beta_k \cdot T_{ki} + \sum_{p=91,99} \gamma_p \cdot C_{pi} \\
 & + \sum_{n=1,9} \sum_{k=1,4} \delta_{n,k} \cdot D_{ni} \cdot T_{ki} + \sum_{p=91,99} \sum_{k=1,4} \phi_{kp} \cdot T_{ki} \cdot C_{pi} + \psi \cdot X_i + \epsilon_i
 \end{aligned} \tag{1}$$

We also estimate, using a logit regression, the probability $Pr[AG_i \geq 10 | D_{ni}, C_{pi}, T_{ki}, X_i]$ that the age gap between the richer and the poorer partner is greater or equal to 10 years.

We also fully interact all the right-hand-side variables of equation 1 with three age categories: 18 – 39, 40 – 59, and 60+. This allows predicting the outcomes for each age category (i.e. predicting the age gap depending on the income quantile of the richer partner and their age group).

We then plot the predicted age gap between the richer and poorer partner, by type of couple and by age category, against the different moments of income of the richer partner D_n and C_p .

Alternatively, we estimate the age gap or the likelihood of an extreme age gap between the richer and poorer partners, depending on the relative income of the richer partner or their income rank.

In robustness exercises, we consider other concepts of income, we distinguish first versus higher-order unions, formal versus informal unions, as well as widowed versus non widowed partners and other selection criteria.

4 Results

4.1 Descriptive statistics

Age gaps over the life cycle

As shown in Table 1, in our sample, 62% of newly formed heterosexual couples are age-hypergamous, i.e. with an older male partner; 13% contain partners of the same age; and the remaining quarter is age-hypogamous (older female partner). The absolute age gap is larger among age-hypergamous couples (4.5 years on average) than among age-hypogamous couples (3.7 years), but it is also larger among same-sex couples (4.3 for same-sex men and 4.6 for same-sex women). Extreme age gaps among heterosexual couples (of more than 10 years or 15 years) are also much more frequent in hypergamous couples than in hypogamous couples, and they are nearly twice as common among same-sex couples as among heterosexual unions. About 11% of newly formed age-hypergamous heterosexual couples have at least a 10 year age gap, counting about 14% for same-sex couples. Finally, the percentage of extreme age-heterogamous couples is similar among lesbian and gay couples. These findings are consistent with those of Silva and Persheski (2022), who find, based on American data, that man-man couples have higher rates of age heterogamy than woman-man couples. In their data, more than 3 in 10 man-man couples had age gaps of at least 8 years between partners.

Concerning the role of fertility as a mating criterion, the second and third panels of Table 1 show that age gaps are smaller and extreme age gaps are less frequent among couples where the younger woman is under 40, in contrast with the prediction of hypothesis (H1). This is true for all types of couples (heterosexual and lesbian).

Finally, the lower part of Table 1 addresses the differences between more or less "urban" areas (*départements*), following the definition as in Section 3.1. It is true that in "rural" areas, extreme age gaps (over 10 or 15 years) are slightly more frequent. However, the general pattern is similar in both types of regions, i.e., extreme age gaps are more frequent among same-sex couples, and there is a predominance of age-hypergamous couples among heterosexual couples.

Overall, as illustrated by Figure 1, heterosexual men, on average, start mating with younger women as soon as they reach 25 years old. This is also true for gay men and lesbians when they reach the age of about 32. By contrast, heterosexual women of all ages generally mate with older men (until they reach the age of 80). The same asymmetry characterizes the proportion of extreme age gaps.

Age gap and income

Turning to the relationship between income and the age gap, Figure 2 displays the age gap between an individual (Ego) and their partner, depending on Ego's income and the type of couple. The age gap increases with Ego's income, except for heterosexual women who, regardless of their income, match with older men. This is in line with hypothesis (H2) of socio-biological and patriarchal theories.

To deepen this observation of the asymmetry between men and women in heterosexual couples, Figure 3 displays the age gap (age of man minus age of woman) in heterosexual couples, depending on the income decile of a partner within their respective age group. The figure shows that the income gap increases sharply (from 2.5 to 6 years on average) within the top decile, for men aged above 40. For women, the pattern is entirely different, as, on average, they consistently mate with an older male partner, regardless of their age category or income decile within their own age group. Even when they reach the highest income ranks, they still tend to mate with even older men. Similarly, the proportion of couples with more than a 10 year age gap follows similar patterns: it increases in the top decile for men, but not at all for women (Figure 4, right pane).

In the sequel, we will focus on the age difference between the richer and the poorer partner, a notion that can apply to all types of couples. Figure A1 in the Appendix displays the average age gap between partners, depending on who is the richer. In heterosexual couples, the richer the male partner, the younger their female partner is, on average by 3 years (for the top 10) to 3.5 years (top percentile). The average gap is smaller in gay couples, and even more so for lesbian couples. However, the age gap remains negative in woman-richer couples: even when their income belongs to the top 10% category, women form unions with

older men. Concerning the percentage of extreme age gaps, Figure A2 shows that about 14% of heterosexual men and 18% of gay men who belong to the top income percentile have a partner who is at least 10 years younger than they are. These proportions are smaller among lesbian couples and negligible among female richer heterosexual couples. These descriptive statistics are consistent with hypothesis (H2).

4.2 Estimates. Income gap and age gap

We now turn to the estimates of equation 1, as described in section 3.3.

Age gap and income of the richer partner

The left panel of Figure 5 considers the average age gap in years, while the right panel displays the fraction of couples with an age difference of at least 10 years between the richer and the poorer partner. As can be seen, the age gap increases as the income of the richer partner rises up to the 90th percentile and more steeply so within the top decile (90 to 100 percentiles). However, this is true only for man-richer heterosexual couples and gay couples. Among woman-richer heterosexual couples, women still tend to form a couple with an older partner, even more so as they reach the very top decile of the income distribution in the population. Likewise, in lesbian couples, the age gap between partners increases with the income of the richer partner but we do not observe the same kink in the curve in the top income decile.

The right panel shows that the proportion of couples in which the richer partner is at least 10 years older than the poorer partner increases in the top income decile, but only among male-richer heterosexual couples and gay couples. Within man-older heterosexual couples, the proportion of extreme age gaps rises by 42 percentage points (from 7% to 10%) as the richer (male) partner moves from the bottom to the 8th percentile of the top income decile. In gay couples, this proportion increases from 9% to 13%.

Because a person is more likely to mate with a much younger partner as she ages, and because couple formation may follow different patterns along the life cycle, Figure 6 displays the age gap between the richer and poorer partners, by type of couple and by age category of the richer partner (18-39, 40-59, and above 60). It turns out that the age gap increases with the income of the richer partner, especially when he belongs to the top decile of the income distribution, and even more so if he is aged 60 or older. But again, this is only true when the older and richer partner is a man, in both heterosexual and gay couples. In woman-richer

heterosexual couples, instead of an decrease, we observe an increase in age-hypergamy as women rise in the income distribution, particularly when they are older or when they belong to the top income decile.

Likewise, the proportion of extreme age gaps rises with the income of the richer partner aged 60 or more (up to 20%), but only for man-richer heterosexual couples and for gay (Figure 7). For women-richer couples, the probability of matching with a younger partner decreases sharply with their income quantile, particularly for women in their forties and sixties. These observations confirm those made by England and McClintock (2009) and Shepard (2019), using American data, that age-hypergamy becomes more likely as the age of men at marriage increases, but does not depend as much on the age of the bride.

This asymmetry could be driven by positive assortative mating based on income, particularly if affluent women match with similarly affluent men within the same wealth category, whereas it is not necessarily the case for affluent men. To investigate, we first examine the relationship between the income of the richer person and the age gap with their partner, depending on the income decile (and percentile) of the latter. First, from the perspective of the male partner, Figure A3 in the Appendix shows that for a given male income, the wealthier his female partner, the smaller the age gap relative to her. However, this age gap (man minus woman) always remains positive and increases steeply with **his** income, especially as he reaches the top income decile, regardless **of her** income, as usual. Hence, although the curves are shifted downwards with her income, the pattern remains the same. Second, from the perspective of the female partner (Figure A4 in the Appendix), we observe that the higher her income category, the smaller the age overhang of the male partner; however, this relationship tends to diminish when her own income enters the top decile. Thus, it seems that positive assortative mating does not fully account for the gender asymmetry in the terms of trade between income and youth, particularly at the top of the income distribution.

Age gap and relative income

Another way to look at the relationship between the income gap and the age gap is to consider relative income, i.e., the share of the household income contributed by the richer partner. Figures 8 and 9 show that in woman-richer heterosexual couples, women above 60 can 'buy' a younger male partner (up to 2 years on average) when they contribute at least 75% of the household income. Note that in other types of couples, the average age gap is higher and reaches 4 to 5 years. Concerning extreme age gaps, although the proportion of couples with more than a 10 year gap is between 40% and 50% when the partner who contributes most is a man, it remains between 10% and 20% when the woman is the main contributor to household income.

Feighan (2018) also observed that in American woman-older marriages, women contribute a particularly high proportion of family income compared to other couples. However, as will be discussed in Section 5.3, Figure A11 in the Appendix shows that this result holds predominantly for the sub-sample of informal couples, as opposed to officially married or partnered (Pacs) couples.

Overall, these observations suggest that men and women do not trade their social positions in the same way. Whereas for men, a higher income is associated with the likelihood of mating with a younger partner, concerning women, what matters is not their absolute level of income but their relative income compared to that of their potential partner. Age-hypogamous heterosexual couples tend to appear only in situations where there is a clear financial surplus of the woman over her male partner.

5 Robustness checks and selection issues

These results could potentially be biased by several measurement and selection issues, such as the different mating criteria prevailing in first versus higher-order unions, the relative attractiveness or availability of divorced and widowed individuals, the over-representation of serial partners (frequent maters) in the sample of newly formed couples, etc. We propose alternative specifications below to address these concerns as much as possible.

5.1 Income rank within one's cohort and gender

Our results could be driven by the dynamics of income over the life cycle; they could also reflect the general gender gap in earnings. To address these concerns, we use a different concept of income: the income percentile of a person **within their own cohort and gender**. The "richer" partner of a couple is selected accordingly, i.e. the one with the higher rank within their age and gender group. As explained in section 3.2, this relative notion of income may also be a better proxy of a person's unobserved relative "social value" or "social prestige".

Figures A5 and A6 in the Appendix display these estimates across our three age groups. They confirm that the age overhang increases for the top 10% of richer men and decreases for the top 10% of richer women, even when these deciles are calculated within each age and sex category, particularly as they form a couple in later ages (between 40 and 59 or after 60).

5.2 First versus higher-order unions

Do these findings depend on whether the unions we observe are first or higher-order unions? Our data contain information about the marital status of partners in the year preceding the union (in 2018), namely, single, married, or in a PACS (the French formal civil partnership), divorced, or widowed.⁶ We define first unions as couples in which both partners were not previously married, i.e., those who are neither divorced nor widowed.

Figure A7 in the Appendix shows that, as expected, the age gap between spouses is greater among higher-order unions than among first unions. The gradient in the age gap is particularly sharp when the richer partner belongs to the top decile of the income distribution, and even more so in higher-order unions compared to first unions. But again, this is not the case for woman-richer heterosexual couples, where the opposite effect is observed in both first and second unions. The same picture appears regarding the likelihood of forming a couple with an extreme age gap (right panel of the figure).

What about the influence of the income share of the female partner? Again, the patterns are similar and much clearer in higher-order unions than in first unions (richer women over 60 are more likely to form a couple with a young man if they contribute at least 75% of the household income - see Figures A8 and A9 in the Appendix).

The patterns we have uncovered are thus partly driven by second and higher-order unions, but not exclusively.

We also examined whether the presence of children in the household prior to the formation of the couple changed the observed relationships; however, it did not (not shown).

5.3 Formal versus informal unions

Do we observe different mating criteria across couples, depending on whether they have a formal contract - marriage or PACS?⁷ One might indeed suspect that the criteria for entering a formal union may be more stringent than for informal unions, as they are more difficult to dissolve. Looking at official couples, either married or pacsés, also has the advantage of ruling out the risk of misclassification error, especially for same-sex couples (the suspicion can be ruled out that they share the same roof without being a couple).

⁶We do not have any information about previous unmarried partnerships.

⁷Recall that we observe couples in the first year they form a partnership, i.e., when they start declaring a common housing tax return.

Most estimated relationships between age gap and income quantile, or the contribution of the richer partner, appear to follow the same patterns as before, whether among formal or informal unions (Figures A10 and A11 in the Appendix), although these associations are stronger among informal couples. There is, however, one exception: when a new couple is formed by a woman and a much younger male partner, this generally occurs without a formal contract (at least initially) (figure A12 in the Appendix). In view of the earlier remark, this observation calls for caution in the interpretation of these couples.

5.4 Over-representation of '*Don Juans*'?

The distinction between first versus higher-order unions, and formal versus informal unions, can also serve to address a bias that could potentially stem from the over-representation of 'serial partners' in the sample. Indeed, if such '*Don Juans*' figures are over-represented in our sample, this could bias our estimation of average mating criteria in the general population, by giving too much weight to the type of match that they typically form. It is thus possible that the concentration of large age-hypergamous couples at the top of the male income distribution is partly driven by these 'serial partners'. This issue is partly addressed by distinguishing first versus higher-order unions, as well as the type of couple formation (marriage, PACS, or cohabitation), which can be interpreted as reflecting partners' degree of commitment. As shown by Figures A7 to A12 in the Appendix, the positive relationship between age gap and income of the richer partner follows the same trend in all these sub-populations, but is indeed more pronounced among informal unions and higher-order unions. It is thus possible that 'serial-maters' are more often found at the top of the income distribution and that they are partly responsible for the uncovered patterns.

5.5 Widowed versus non widowed partners

Widowhood could also be a selection criterion, either as an attractive trait denoting an undesired separation, or as a condition for availability. To see how much this explains our results, we run our estimates on separate sub-samples for widowed versus non-widowed persons. Specifically, we distinguish couples depending on whether at least one partner is widowed or neither partner is. Note that for this exercise we exclude same-sex couples because of sample size issues - we do not observe enough widows and widowers in these groups. As shown by Figure A14, the results are less precisely estimated for the sub-samples of widowed people, due to the smaller number of observations, but the order of magnitude and the patterns of the relationship

(between income of the richer partner and age gaps) are similar. It thus seems that widowhood is not a major driver of our results.

5.6 Income or activity?

The literature on retirement shows that people who choose to work past the retirement age are likely to have more interesting jobs, be healthier and happier. They are also in a position to meet younger people through their work. One could thus wonder, whether the marriage prospects of older adults are really reflecting income effects, or rather capturing some specific traits of non-retired older people. To inquire, we run separate estimates on retired versus non-retired populations. More precisely, we perform separate regressions on two subsample of couples: one where at least one partner is retired, and the other where no partner is retired. We also experiment by adding a control for the retirement status of partners, indicating whether none, one, or both partners are retired, in our main specification. These treatments appear in Appendix Figures A13 and A15. As can be seen, the patterns are similar in both populations, although less precisely measured in the sample of retired people, because of the smaller number of observations. It thus seems that it is indeed income and not simply being professionally active, that drives the results.

6 Conclusions

By exploring the universe of newly formed couples in France in 2019, this paper has tried to contribute to the economic literature in three ways. First, by identifying the mating criteria of men and women, depending on their sexual orientation. Second, by adding to the scant literature on age as a mating criterion. Third, by studying the formation of new couples, instead of existing couples (where many behaviors are endogenous to collective decision-making and bargaining). Our main objective is to assess men and women's preferences for youth or age-hypergamy. We test whether the patterns that we observe are consistent with Grossbard's theory of compensating differences (here between income and youth).

Our results show that biological theory is clearly not sufficient to explain age-hypergamy. First, it is among same-sex couples (either in urban or rural areas) that age gaps are wider and extreme age gaps are more likely, although this could partly be attributed to their narrower mating pool. Second, among heterosexual couples, the age gap is greatest in couples with an older male partner and a woman older than 40 years. Likewise, among lesbian couples, the age gap is wider when the younger partner is over 40 years

of age. Age-heterogamy thus does not seem to be entirely explained by the importance of fertility as a mating preference.

Next, we observe a systematic relationship between income and the age gap between partners. The average age gap is greater in couples where the richer partner belongs to the highest income decile, or the greater their share of household income. This seems consistent with exchange theory, whereby money can buy youth, in line with Grossbard's compensating differentials framework.

However, we also uncover an asymmetry that qualifies this conclusion: money, as measured by several notions of income, buys men a younger partner (on average), and for some of them, a much younger partner (more than 10 years younger). But this is not the case for women, either in lesbian couples or woman-richer heterosexual couples. We observe women matching with a younger or much younger partner only when she has a clear financial surplus over her partner, in particular, when her contribution to household income is greater than 75%.

Hence, men and women do seem to trade their social positions in exchange for youth, but with different terms of trade.

Note that these findings rule out the idea that women appreciate older men as such; otherwise, the age gap would not depend on the income of their male partner's income.

Although it is difficult to know the extent to which these patterns reflect mating preferences on both sides, it remains that they are consistent with exchange theory, whereby partners trade their traits, with both income and youth being desirable traits in the eyes of both men and women. However, we also uncover some persistence of the traditional culture, where it is expected that men "dominate" their partner in terms of income and age, while the reverse is more difficult to accept. It remains to be seen to what extent this norm will persist over time as the income and social status gap between men and women narrows and the proportion of couples in which the woman earns more than her partner increases. Will the price of youth continue to depend on the sex of the buyer?

Finally, let us highlight the limitations of this paper. First, our findings are time and region specific (France in 2019); we cannot claim generality beyond the scope of countries that share similar marriage markets. Second, because we focus on the flow of new unions, our sample is not representative of the stock of all existing couples. This is because some people may be over-represented if they typically form less stable couples and match more frequently. Our analyses thus characterize the flow of all new unions in France in 2019 but cannot be generalized to all existing couples. We attempt to address this issue by

distinguishing between first versus higher-order unions, and formal versus informal unions, as well as other sources of selection, such as retirement or widowhood. Third, we only observe matched couples but not individuals who remain single. However, it is common knowledge that older women are more often single than men.⁸ This is partly explained by the longer life expectancy of women, but other mechanisms may be at work, such as men's preference for younger women, and older women's choice to remain single (Solaz, 2021) rather than "marry down" (England and McClintock, 2009). Another limitation is that we do not have information about the education and occupation of people, which requires us to use income as a proxy for social status, power, and prestige. We partly compensate for this drawback by using the percentile of each partner in the income distribution within their own age and gender. Finally, we do not have information on people's wealth, except for the income flow that they derive from it, which of course may matter for partners' attractiveness. These elements constitute avenues for future explorations of the mating process.

In spite of these shortcomings, we hope that these results contribute to advancing our understanding of multi-dimensional sorting in marriage markets.

⁸In France, for example, after the age of 55, the proportion of women who live alone increases more than that of men (INSEE 2025a).

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7 Tables and Figures

Figure 1: Age of Partner 1 ("Ego") and Average Age Gap (Partner 1 - Partner 2)

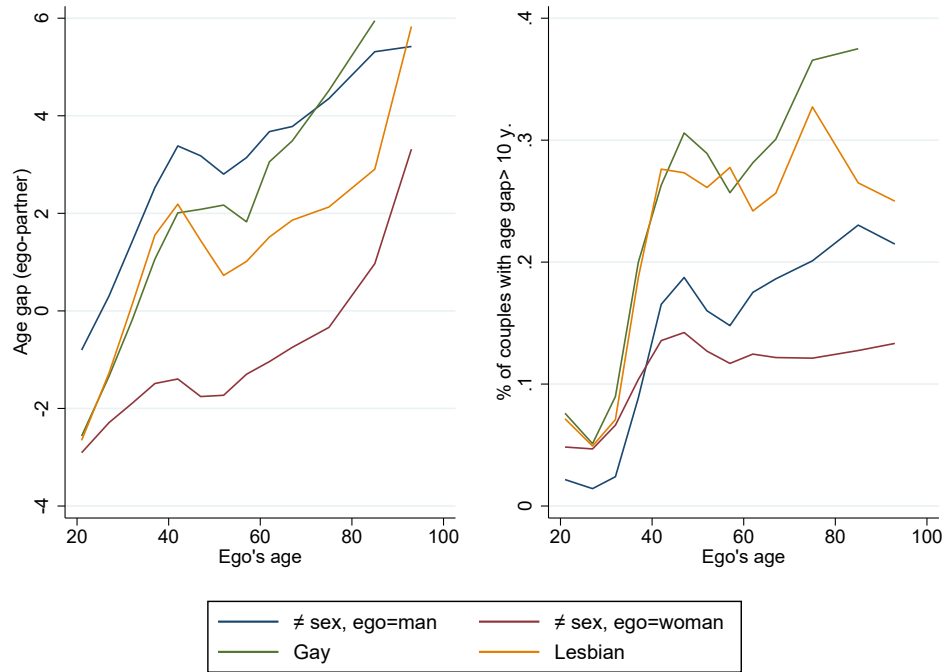


Figure 2: Income of Partner 1 ("Ego") and Average Age Gap (Partner 1 - Partner 2)

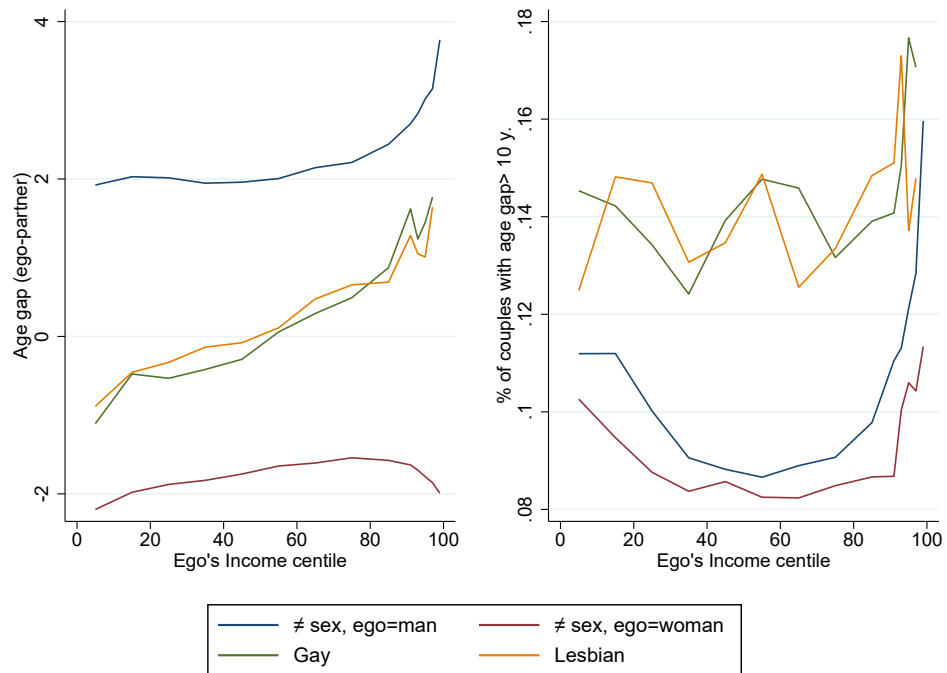
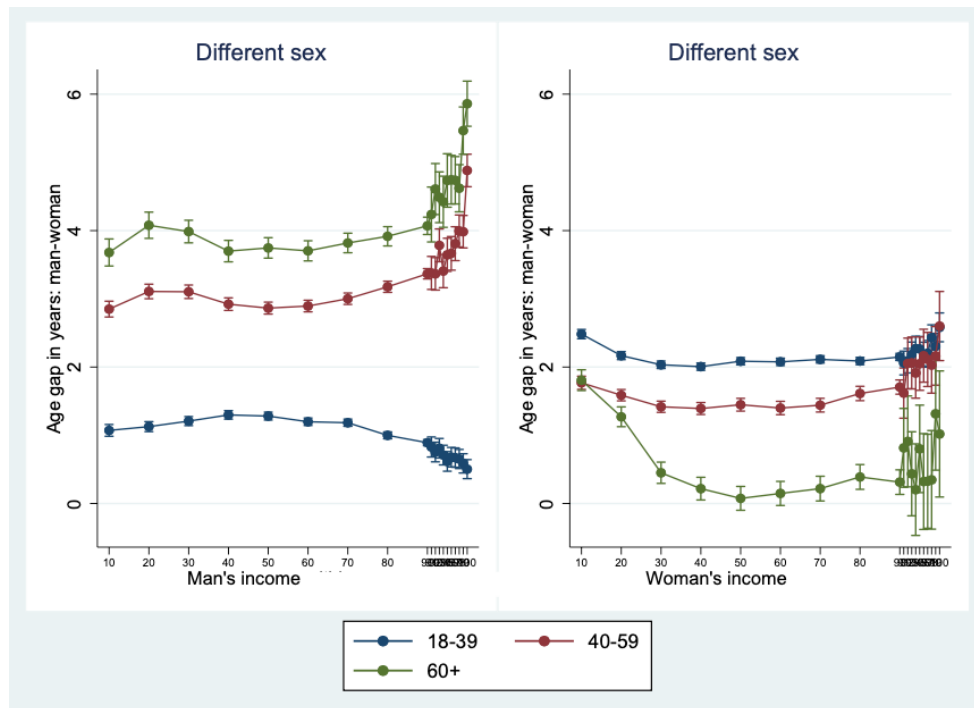


Table 1: Descriptive statistics of age gaps by type of couple

	Age gap	Extreme age gaps (%)		N
	Mean	Age gap>10 y.	Age gap>15 y.	
All couples				451,441
Different sex couple	3.73	8.3	1.8	413,330
<i>Man older</i>	4.51	10.6	2.4	256,892 (62%)
<i>Same age</i>	0			51,885 (13%)
<i>Woman older</i>	3.65	6.9	1.4	104,553 (25%)
Same sex men	4.36	14.0	3.0	21,042
Same sex Women	4.33	13.4	3.0	17,069
By woman's age				
<i>With woman <= 40 (at least one for same-sex)</i>				
Different sex couple	3.30	6.2	1.3	285,173
<i>Man older</i>	4.23	9.0	2.0	183,132
<i>Same age</i>	0			40,904
<i>Woman older</i>	2.74	1.9	0.1	61,137
Same sex women	3.88	10.8	2.3	13,119
<i>With woman >40 (all women for same-sex)</i>				
Different sex couple	4.66	12.9	3.0	128,157
<i>Man older</i>	5.20	14.3	3.3	73,76
<i>Same age</i>	0			10,981
<i>Woman older</i>	4.92	13.9	3.2	43,416
Same sex women	5.81	21.9	5.5	3,950
By region of residence				
<i>Living in rural region</i>				
Different sex couple	3.79	8.5	1.9	293,11
<i>Man older</i>	4.55	10.7	2.4	182,515
<i>Same age</i>	0			35,435
<i>Woman older</i>	3.74	7.3	1.4	75,16
Same sex men	4.67	15.5	3.4	11,906
Same sex women	4.72	15.3	3.5	10,130
<i>Living in urban region</i>				
Different sex couple	3.56	7.8	1.7	120,22
<i>Man older</i>	4.41	10.2	2.3	74,377
<i>Same age</i>	0			16,450
<i>Woman older</i>	3.40	6.0	1.2	29,393
Same sex men	3.97	12.0	2.5	9,136
Same sex women	3.76	10.5	2.3	6,939

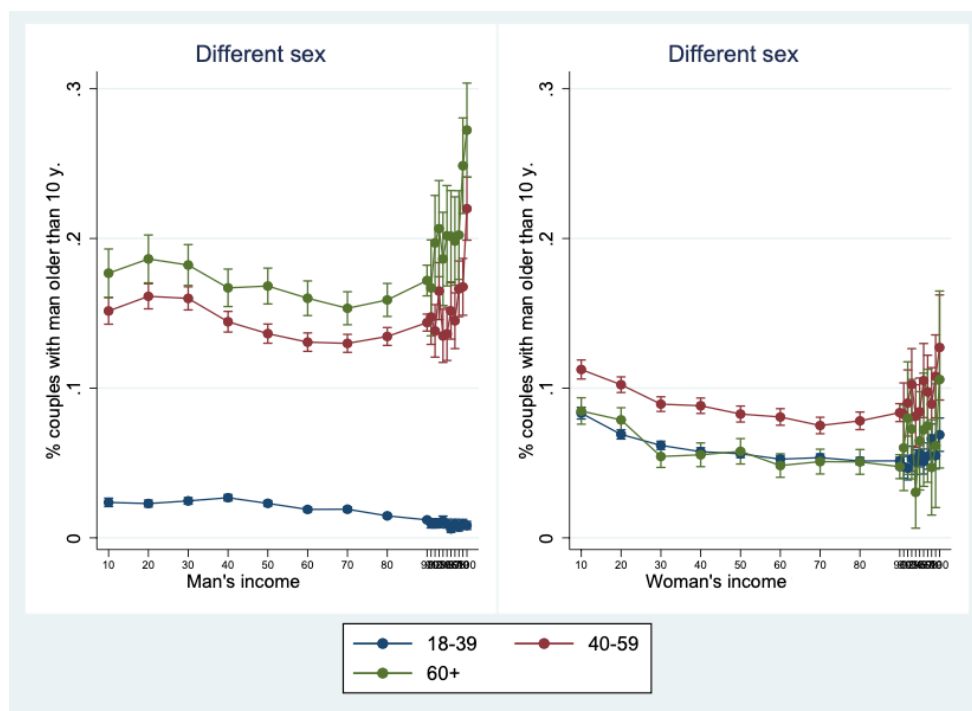
Source: Fideli 2020. Urban regions are defined as the départements that include the largest cities: Paris, Marseille, Lyon, Bordeaux, and Toulouse.

Figure 3: Income quantile (by Age Group) and Age Gap (Man - Woman)



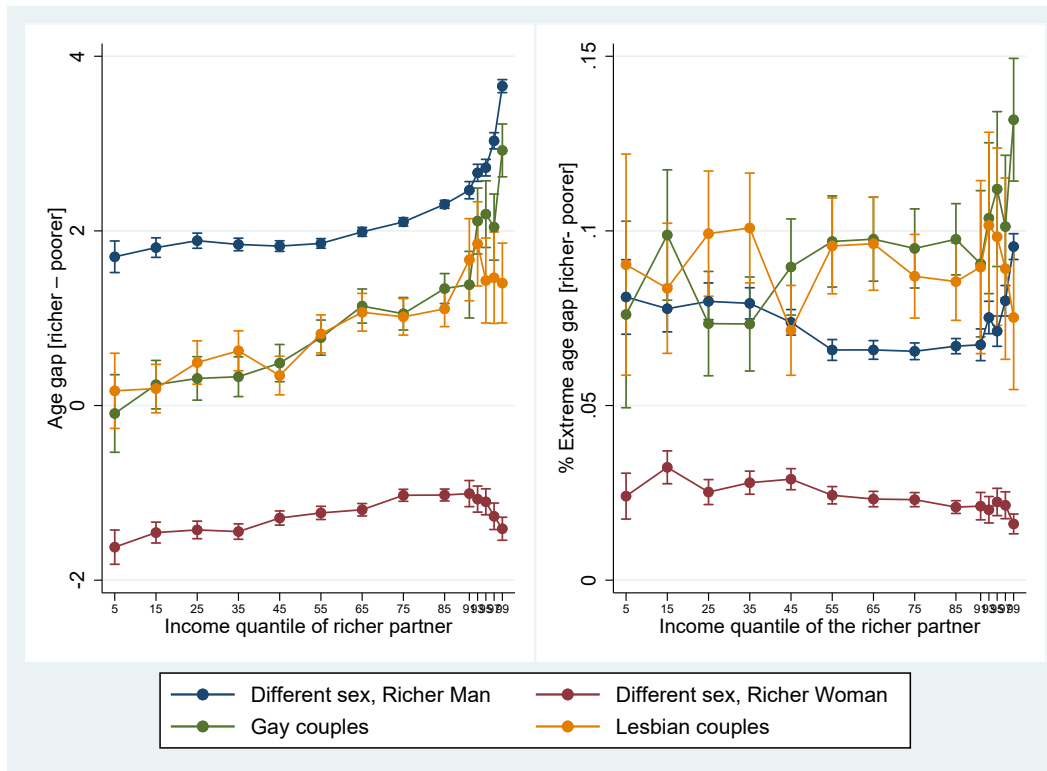
Predicted values from OLS regressions. No controls

Figure 4: Income quantile (by Age Group) and **Extreme** Age Gap (Man - Woman)



Predicted values from logistic regressions. No controls

Figure 5: Age Gap and Extreme Age Gap of Richer minus Poorer Partner



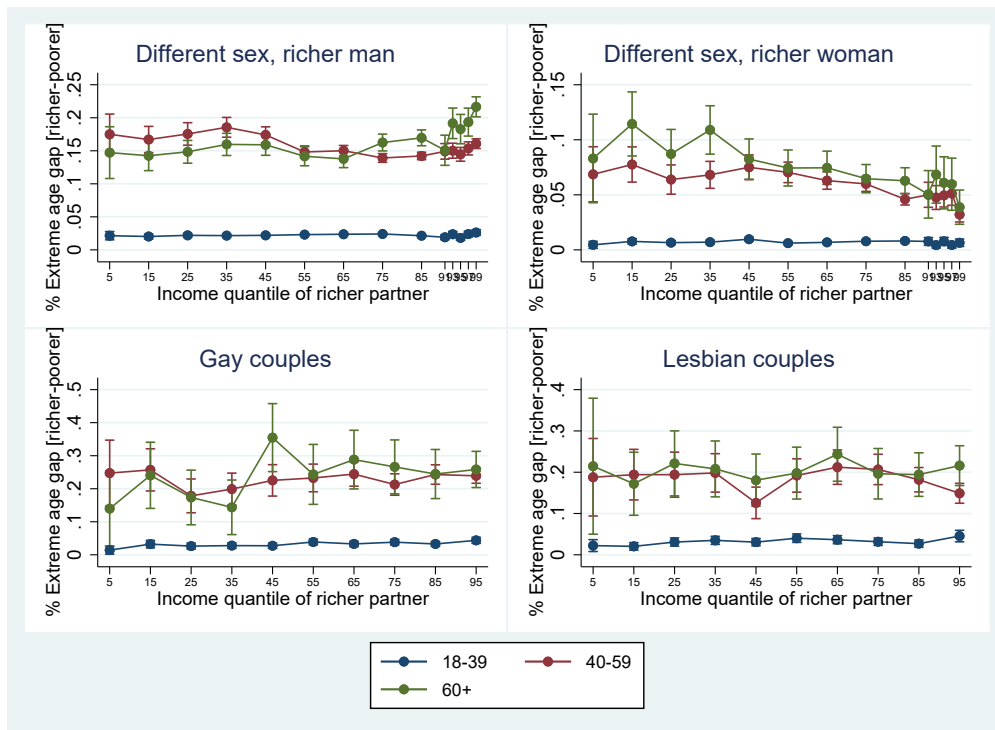
Predicted values from OLS (left) and logistic (right) regressions. Controls: average age, urban/rural region, children, foreign or mixed couple. Left panel: age gap between the richer and the poorer partner. Right panel: % of couples with at least 10 years age gap between richer and poorer partner.

Figure 6: Age Gap of Richer minus Poorer Partner, by Age Group



Predicted values from OLS regressions. Controls: urban/rural region, children, foreign or mixed couple.

Figure 7: **Extreme** Age Gaps of Richer minus Poorer Partner, by Age Group



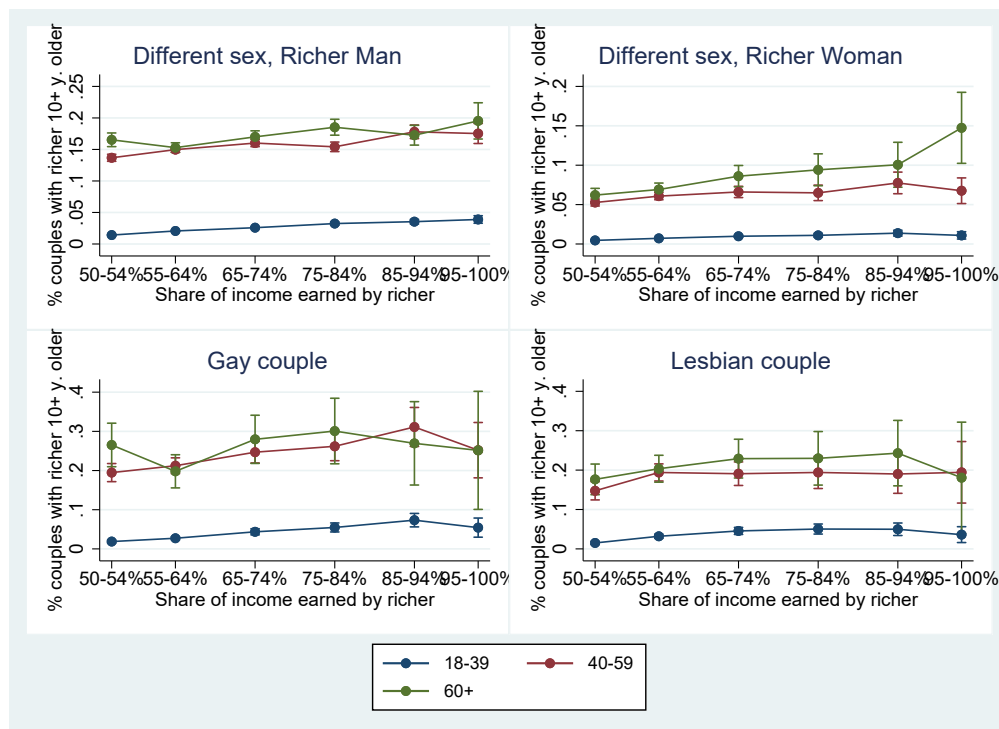
Predicted values from logistic regressions. Controls: urban/rural region, children, foreign or mixed couple. Extreme age gap = more than 10 years.

Figure 8: Age Gap and **Income Share** of the Richer Partner



Predicted values from OLS regressions. Controls: children, urban/rural region, foreign or mixed couple.

Figure 9: **Extreme Age Gap and Income Share of the Richer Partner**



Predicted values from logistic regressions. Controls: children, urban/rural region, foreign or mixed couple.

Appendix

Table A1: Descriptive statistics of the sample of **new couples** in 2019

	Richer Man	Richer Woman	Gay couples	Lesbian couples	Total
Income					
Yearly income of richer partner (k euros)	30.3	26.3	27.6	23.7	28.7
Share of income earned by richer partner	65.1	62.1	64.6	64.4	64.1
Average age of couple					
20	34.3%	32.7%	41.9%	41.5%	34.4%
30	33.2%	35.6%	33.4%	31.8%	33.9%
40	13.9%	13.4%	13.2%	10.7%	13.6%
50	10.7%	10.3%	7.1%	7.3%	10.3%
60	5.1%	5.8%	3.3%	4.7%	5.2%
70	2.8%	2.1%	1.1%	4.0%	2.6%
Urban region					
Yes	28.5%	30.3%	43.4%	40.7%	30.2%
Origin					
Both partners natives	84.3%	84.4%	74.8%	83.0%	83.8%
One partner non-native	10.2%	10.8%	11.6%	10.4%	10.5%
Both partners non-natives	5.5%	4.9%	13.7%	6.6%	5.7%
Presence of a dependent child					
Yes	38.1%	34.4%	10.7%	18.5%	34.9%
Retirement					
No partner retired	89.8%	89.8%	93.5%	88.9%	90.0%
One partner retired	5.5%	6.2%	4.6%	5.8%	5.7%
Both retired	4.7%	4.0%	2.0%	5.3%	4.4%
Union with a contract (marriage or PACS)					
Married	18.8%	16.9%	3.4%	3.6%	16.9%
PACS: Civil partnership	15.0%	14.0%	7.2%	6.7%	14.0%
1st union (no one previously married)					
Yes	56.4%	59.7%	74.9%	68.6%	58.8%
N	273,223	139,972	21,039	17,067	451,301

Sample of newly formed couples in France in 2019. Source: FIDELI 2018-2019.

Urban regions are defined as the départements that include the largest cities: Paris, Marseille, Lyon, Bordeaux, and Toulouse.

Figure A1: Age Gap between Richer and Poorer Partner



Figure A2: % Couples with Age Gap > 10 years

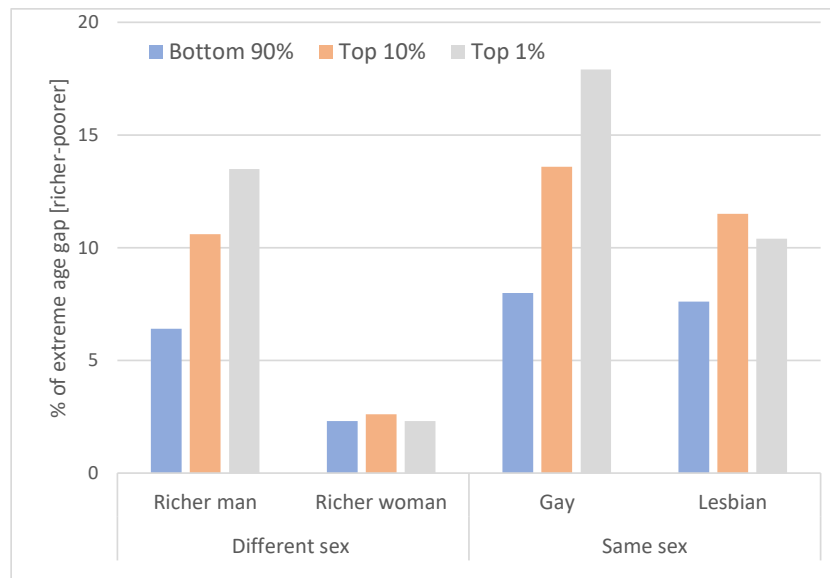
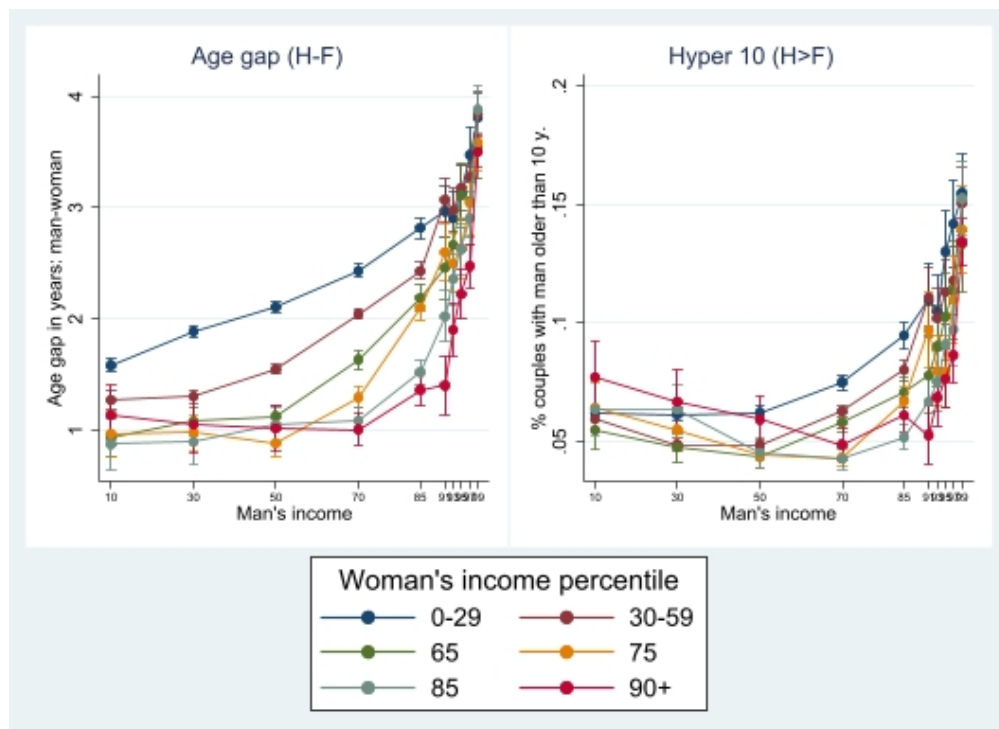
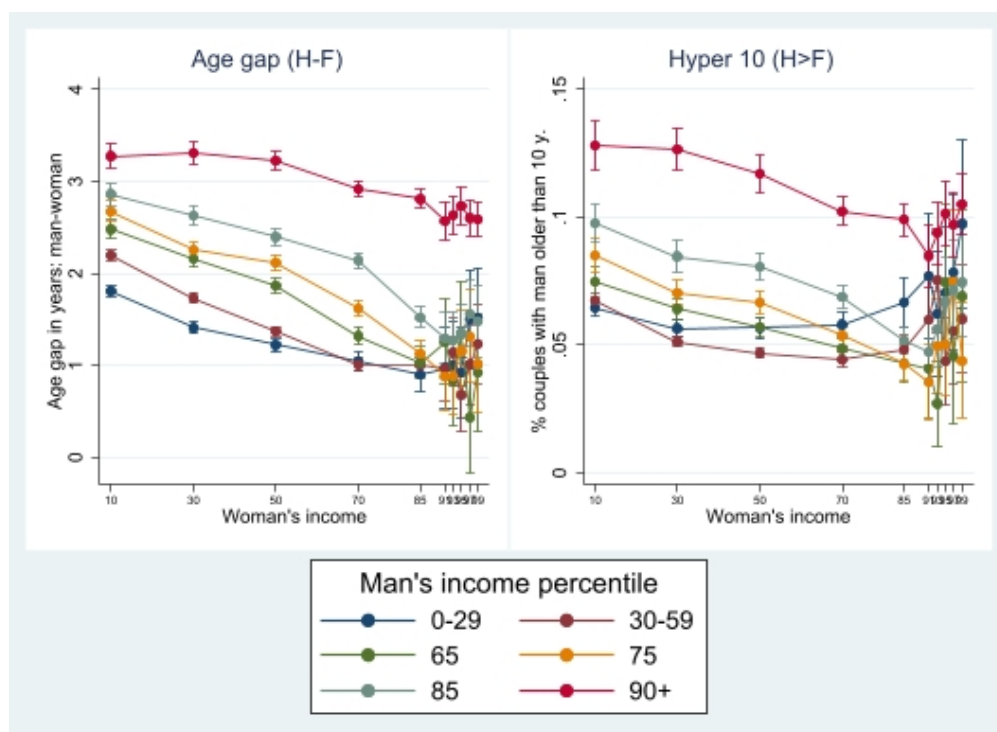


Figure A3: Age Gap and Assortative Mating on Income: Men's Perspective



Predicted values from OLS regressions. Controls: children, urban/rural region, foreign or mixed couple.

Figure A4: Age Gap and Assortative Mating on Income: Women's Perspective



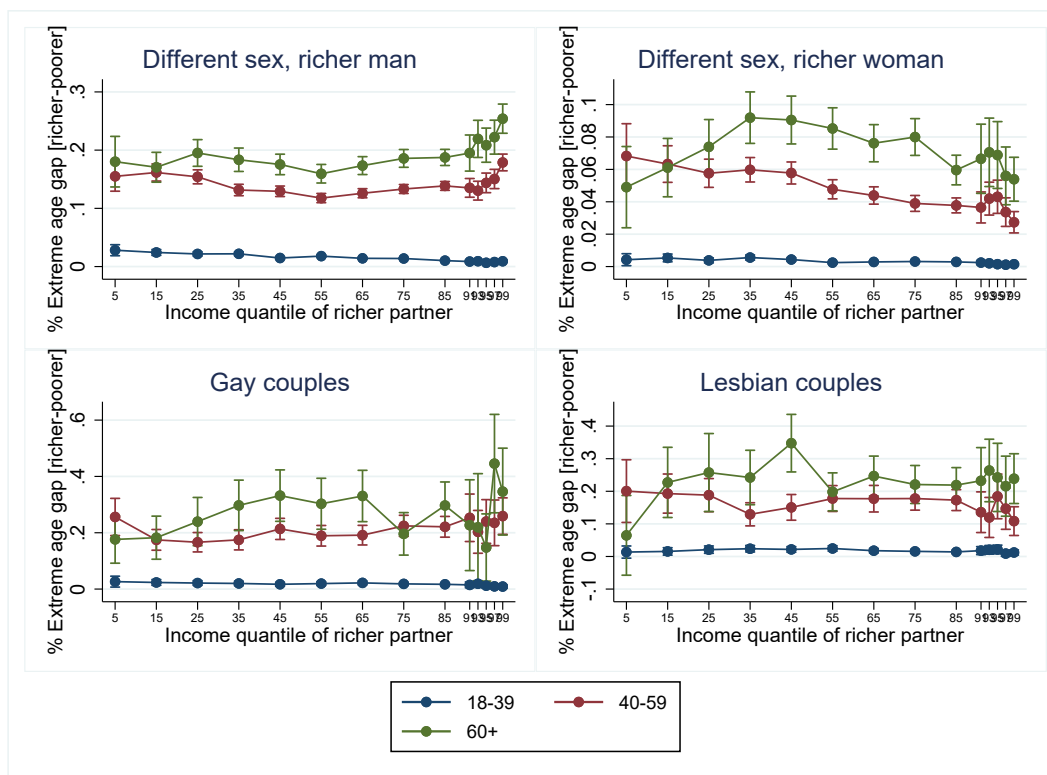
Predicted values from OLS (left) and logistic (right) regressions. Controls: children, urban/rural region, foreign or mixed couple. Extreme age gap = more than 10 years.

Figure A5: Age gap (richer minus poorer) and income rank of the richer partner **in his cohort and gender**.



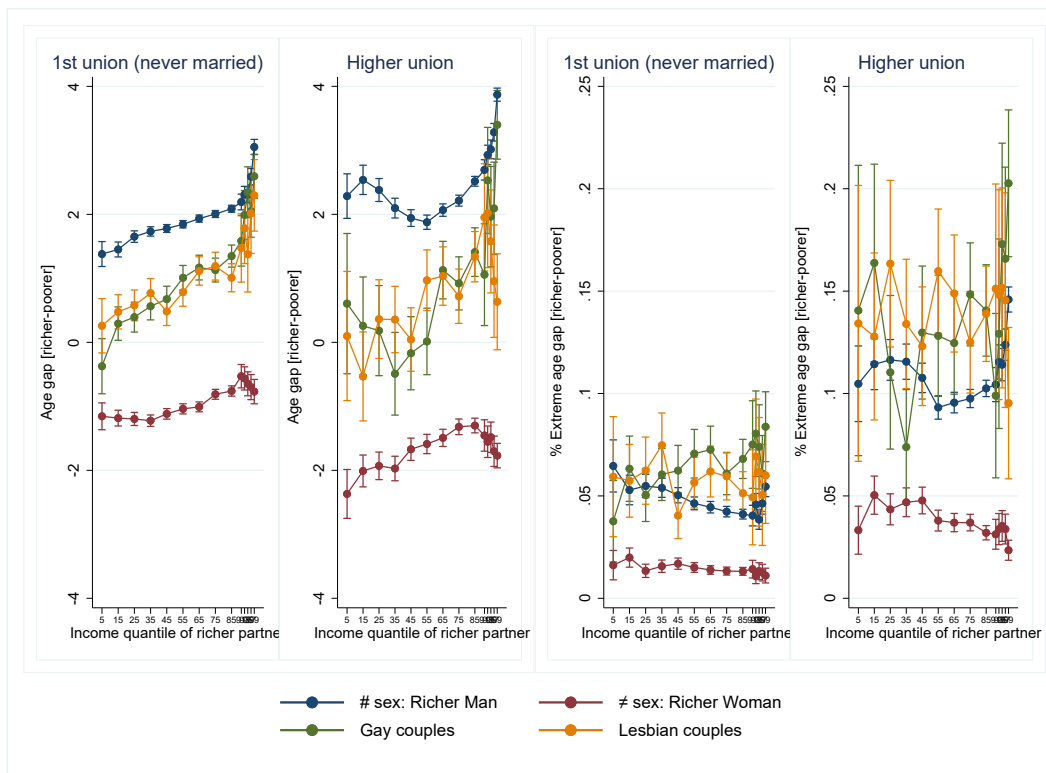
Predicted values from OLS regressions. Controls: children, urban/rural region, foreign or mixed couple. The richer partner is the one who ranks higher in his exact own age and gender group.

Figure A6: **Extreme** age gap between richer and poorer partner, and **income rank** of the richer partner **in his cohort and gender**.



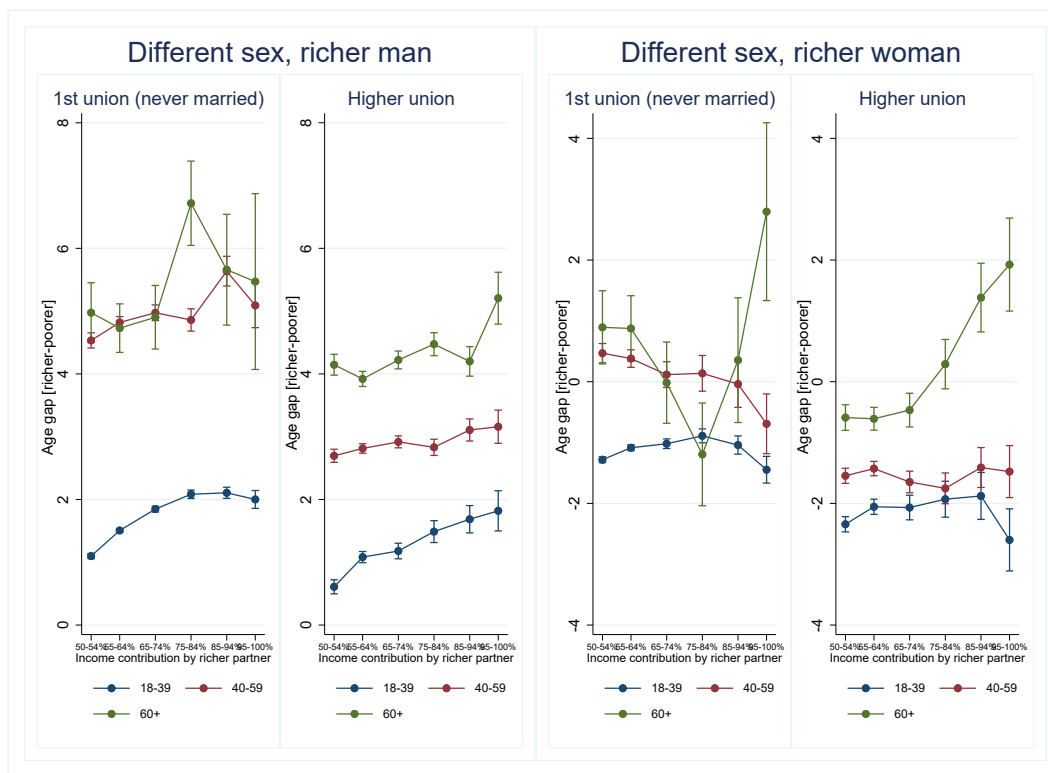
Predicted values from logistic regressions. Controls: children, urban/rural region, foreign or mixed couple. The richer partner is the one who ranks higher in his exact own age and gender group. Extreme age gap = more than 10 years.

Figure A7: Age gap (richer minus poorer partner) and income decile of the richer partner. **First versus higher order unions**



Predicted values from OLS (left) and logistic (right) regressions. Controls: average age, urban/rural region, children, foreign or mixed couple. Extreme age gap = more than 10 years.

Figure A8: Age gap (richer minus poorer partner) and **income contribution** by the richer partner, **First** versus **higher order unions**.



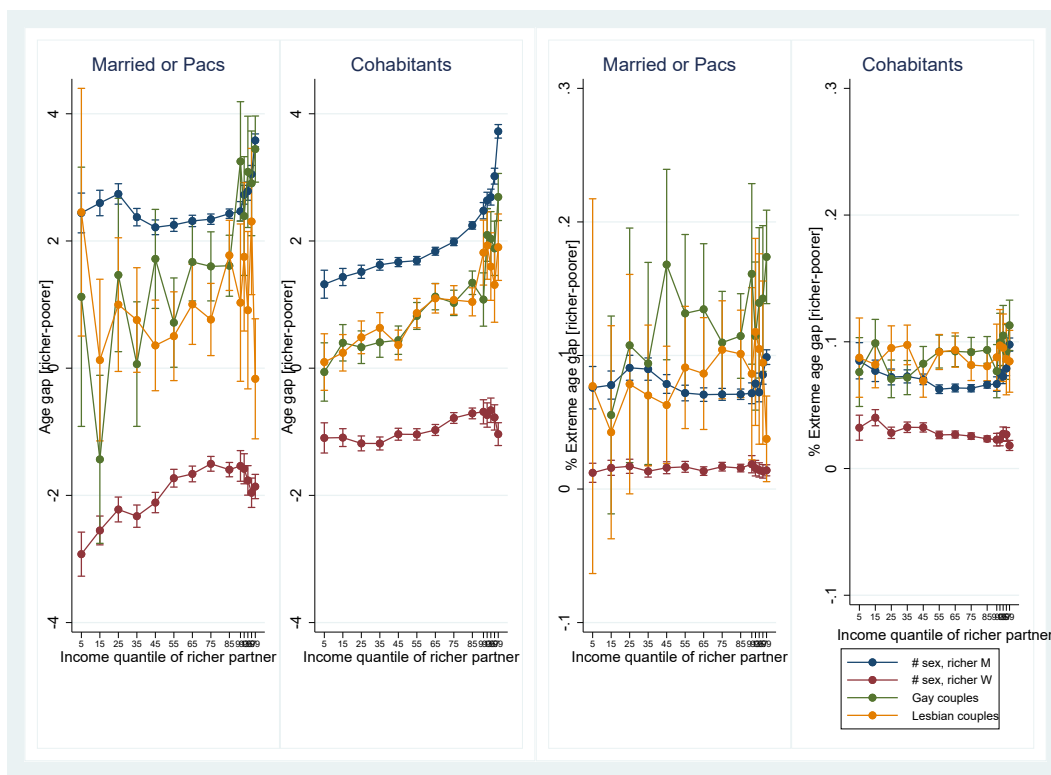
Predicted values from OLS regressions. Controls: urban/rural region, children, foreign or mixed couple.

Figure A9: Extreme age gap richer minus poorer partner) and **income contribution** by the richer partner, **First versus higher order unions**.



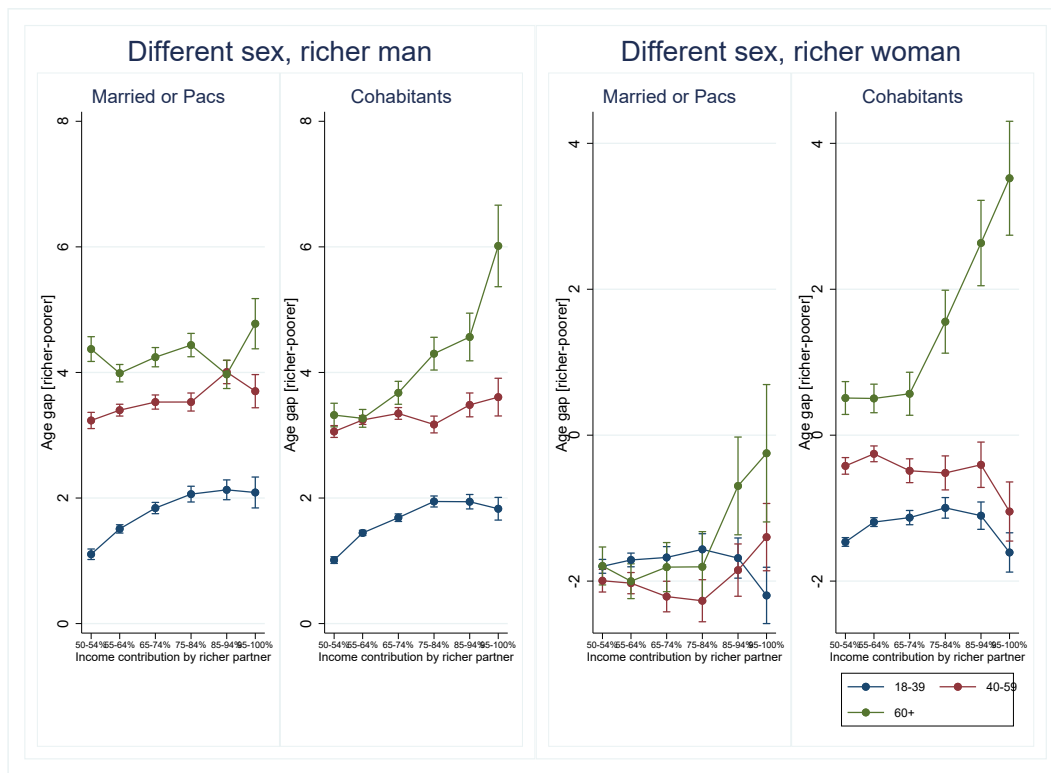
Predicted values from logistic regressions. Controls: urban/rural region, children, foreign or mixed couple. Extreme age gap = more than 10 years.

Figure A10: Age gap (richer minus poorer partner) and income quantile of the richer partner, **Formal versus informal unions**



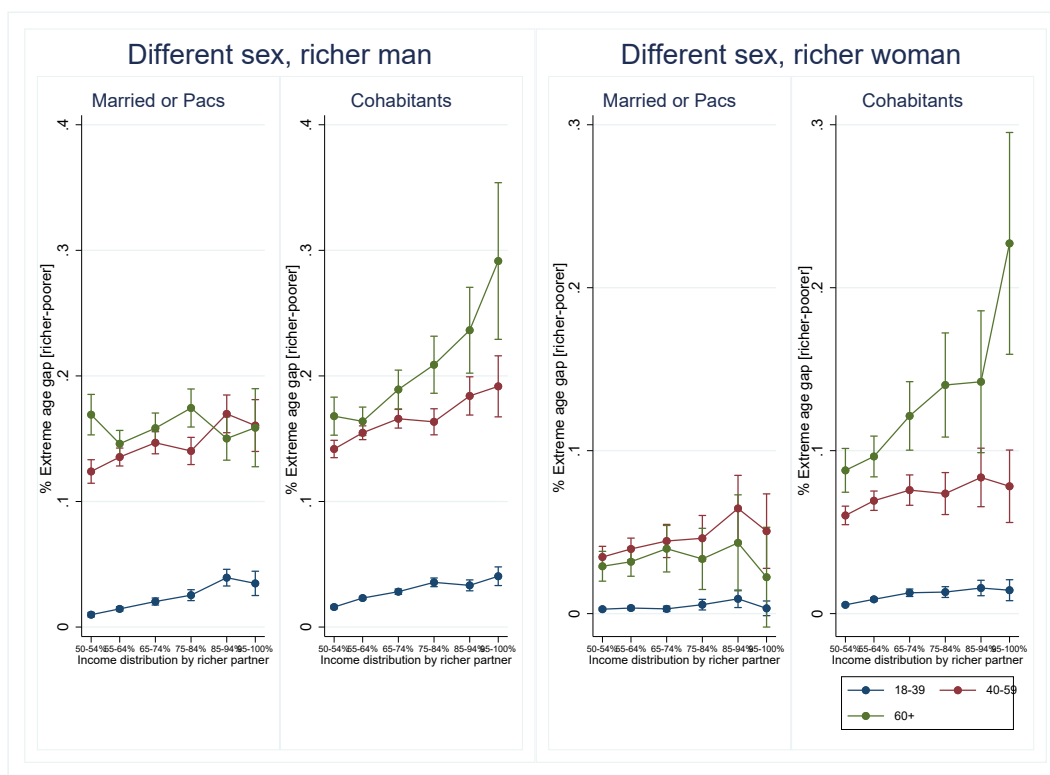
Predicted values from OLS (left) and logistic (right) regressions. Controls: urban/rural region, children, foreign or mixed couple. Extreme age gap = more than 10 years

Figure A11: Age gap (richer minus poorer partner) and **income share** of the richer partner. **Formal versus informal unions**



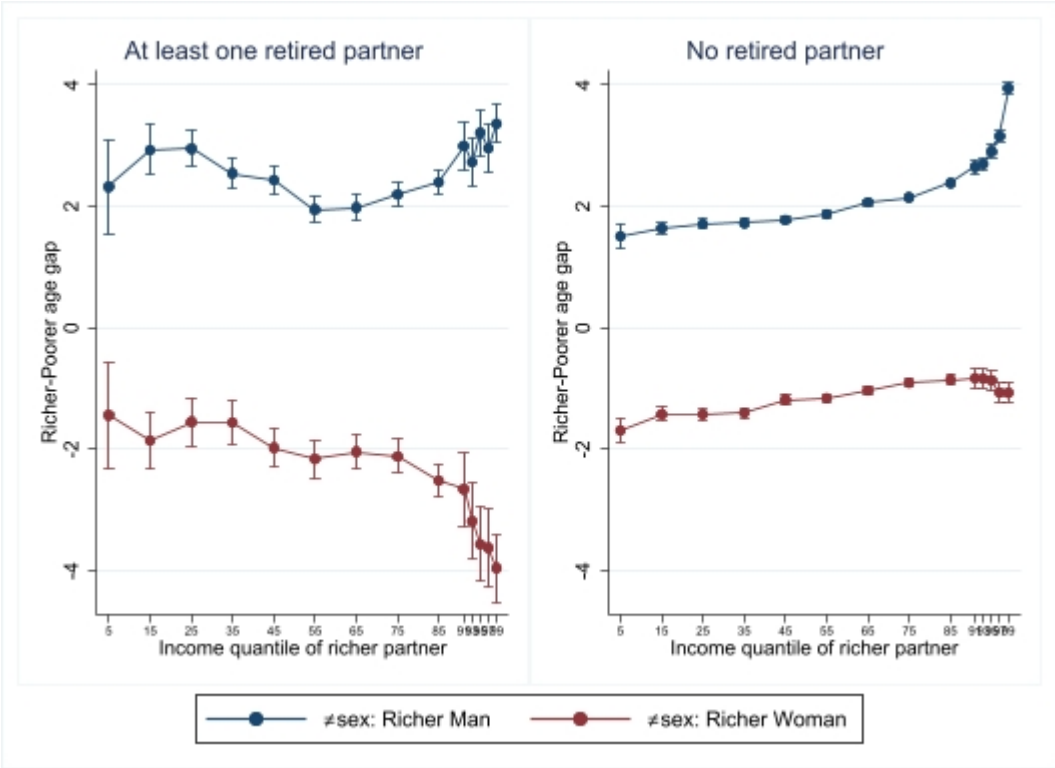
Predicted values from OLS (left) and logistic (right) regressions. Controls: urban/rural region, children, foreign or mixed couple. Extreme age gap = more than 10 years

Figure A12: **Extreme** age gap (richer minus poorer partner) and income decile of the richer partner. **Formal versus informal unions**



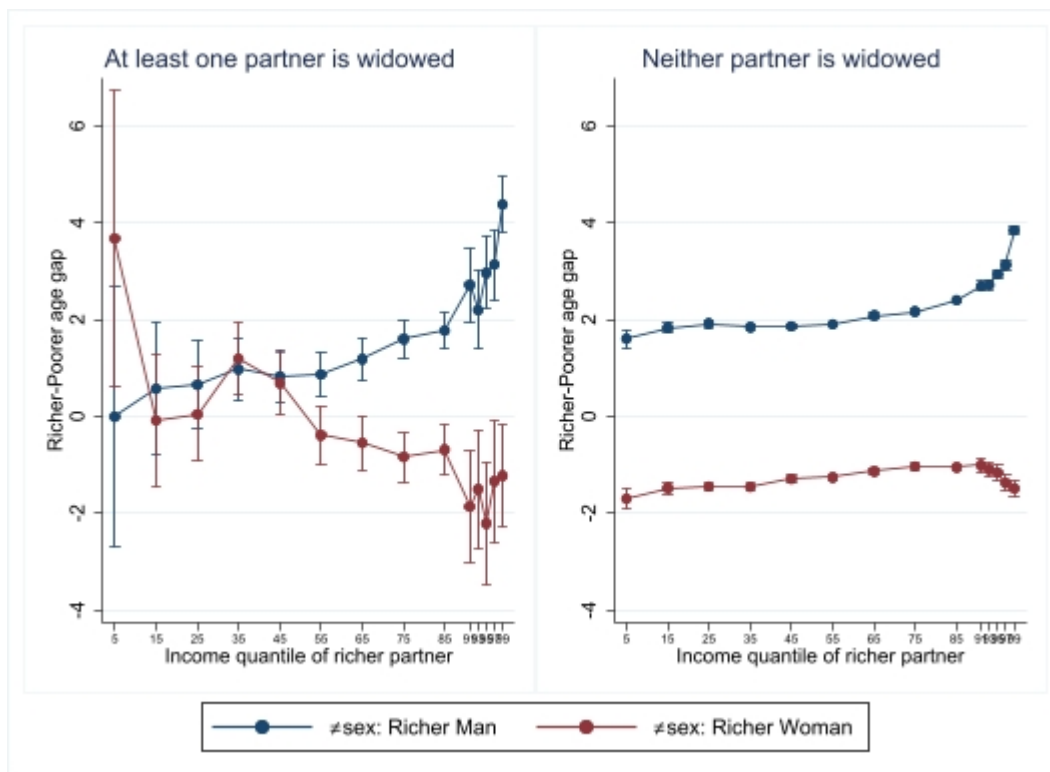
Predicted values from logistic regressions. Controls: urban/rural region, children, foreign or mixed couple. Extreme age gap = more than 10 years.

Figure A13: **By retirement status**



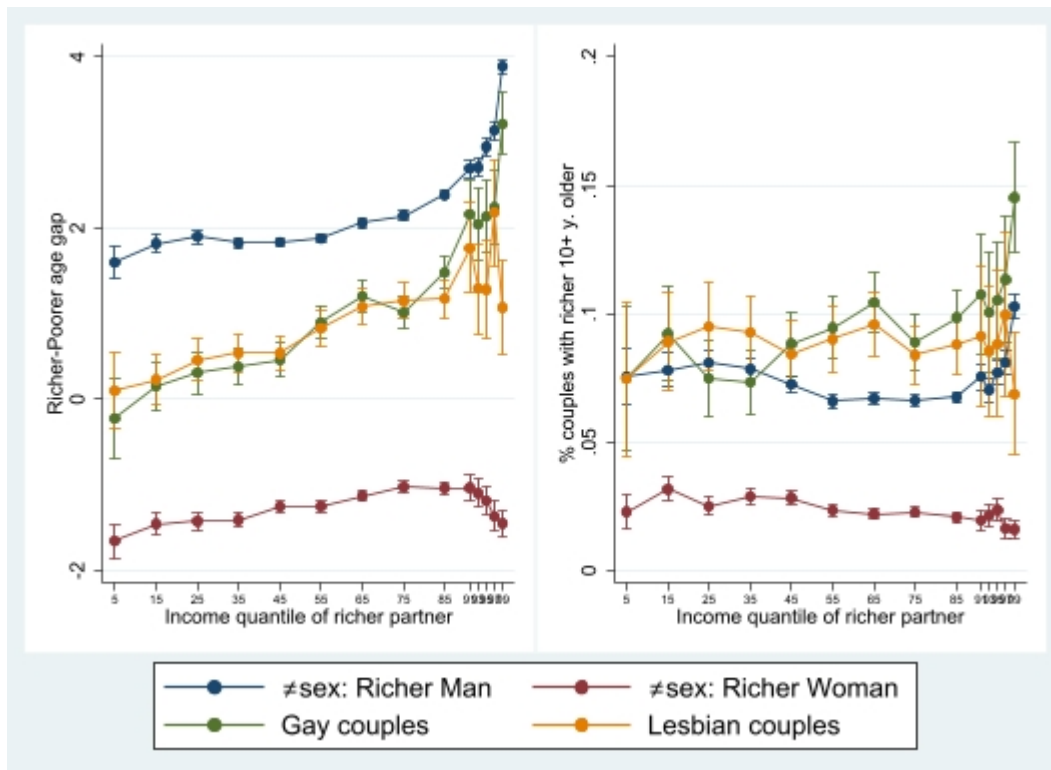
Predicted values from logistic regressions. Controls: urban/rural region, children, foreign or mixed couple.

Figure A14: **By Widowhood Status**



Predicted values from logistic regressions. Controls: urban/rural region, children, foreign or mixed couple.

Figure A15: Controlling for Retirement Status



Predicted values from logistic regressions. Controls: urban/rural region, retirement dummies, children, foreign or mixed couple. Extreme age gap = more than 10 years.

Table A2: Descriptive statistics of **all** French couples in 2019

	Richer man	Richer woman	Gay couples	Lesbian couples	Total
Income					
Yearly inc. richer (k€)	34.82	30.48	35.49	27.33	33.62
Share inc. earned by richer	67.5	61.4	64.5	63.3	65.8
Average age of couple					
20-29	4.5	5.2	18.7	17.5	4.9
30-39	16.9	19.0	29.1	25.8	17.6
40-49	19.0	21.2	21.6	19.5	19.6
50-59	18.5	20.9	17.8	16.0	19.1
60-69	17.3	20.7	8.7	11.3	18.1
70+	23.8	13.0	4.1	10.0	20.7
Urban region (%)					
Yes	23.7	25.0	41.8	36.1	24.3
Origin (%)					
Both natives	82.2	81.7	77.0	83.3	82.0
One native	10.8	11.7	13.7	10.4	11.1
Both non-natives	7.0	6.6	9.3	6.4	6.9
Presence of a dependent child (%)					
Yes	48.4	51.4	10.5	22.3	48.7
Retirement (%)					
None retired	58.6	66.1	84.5	74.9	61.0
One retired	8.8	12.7	9.3	13.0	9.9
Both retired	32.6	21.3	6.3	12.2	29.2
Legal union (%)					
Married or PACSed	82.4	6.4	27.1	21.0	61.2
N	8,844,405	3,271,734	114,187	95,448	12,325,774

Sample of all existing couples in France in 2019. Source: FIDELI

Urban regions are defined as the départements that include the largest cities: Paris, Marseille, Lyon, Bordeaux, and Toulouse.