Urban Misanthropy: ~~Cities and the~~ Do Cities Promote a Dislike of Humankind?

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Abstract

We use pooled US General Social Survey (GSS, 1972-2016) to ~~investigate~~ study the relationship between urbanism and misanthropy (a dislike of humankind). We use three operationalizations of urbanicity and an extensive set of control variables. Human evolutionary history (small group living), psychological theory (homophily or ingroup preference) and classical sociological urban theory suggest that misanthropy should be observed in the most dense and heterogeneous places like large cities. Our results mostly agree: overall, over the past four decades, misanthropy is lowest in smallest settlements (but not in the countryside), and the effect size of urbanicity is about half of that of income. It is only the very largest cities that are robustly more misanthropic than smaller places. Yet, the rural advantage has now disappeared–since the early 1990s till late 2000s, misanthropy has increased fastest in smallest places ($< 10k$). We interpret this finding as an indication that smallest places have been left behind–most resources and amenities are increasingly urban. The analysis is solely for the US, and the results should not be generalized–especially in developing countries results may differ.

KEYWORDS: CITY, URBANISM, TRUST, MISANTHROPY

"The more I learn about people, the more I like my dog." Mark Twain[1]

"To look at the cross-section of any plan of a big city is to look at something like the section of a fibrous tumor." Frank Lloyd Wright

~~Urbanization has significantly affected many aspects of social, political, and economic life (Kleniewski and Thomas 2010). Before industrialization~~

Before industrialization took off, in the early 1800s, only ~~a small~~ several percent of the world population lived in cities; by 1900, however, the proportion more than doubled to 13 percent as people moved to be near factories and industrial sites (Davis 1955). In 1950, a third of the world population inhabited in cities, and by 2050 it is estimated that it will ~~increased~~ increase to about two thirds (`https://esa.un.org/unpd/wup`). ~~When taking into account absolute population increase, urbanization is even more dramatic: In 1990, only 200 million of the world population lived in cities, by 1950, 700 million people, in 2000 almost 3 billion people, and by 2050 it is estimated that over 6 billion people will be living in cities (). As urbanization continues to rampantly add tens of millions of people to cities every year, city living has an enormous effect on the human condition.~~ It is often overlooked that city living is a very recent development in hundreds of thousands years history of human species–city living is not natural for human species.[2]

~~Social scientists have for a long time tried to understand how urbanization affects human beings.Scholars in the past proposed that urbanization created malaise due to the core characteristics of cities: increased population size created anonymity and impersonality, density created sensory overload and withdrawal from social life, and heterogeneity led to anomie and deviance (see Park et al. ([1925] 1984), Si and Wirth (1938)). American intellectuals almost universally expressed ambivalence or animosity toward city life, some even describing the city as "a cancer on the body of the state" (White and White 1977, p. 235). More recently, Amin (2006) summarizes the current sentiment stating that "~~Amin (2006, p.1009) summarizes urban discontent: "for the vast majority of people, cities are polluted,

[1] Interestingly, Cooper (2018) claims that misanthtropy is indeed justified in the light of how humans compare with other animals.

[2] By not natural we mean that humans have not evolved to live in cities, especially not at such large population size, density, and heterogeneity. We elaborate later.

unhealthy, tiring, overwhelming, confusing, alienating," and Thrift (2005) proposes that misanthropy is a common characteristic of urbanism." Thrift (2005, p.140) proposes that urban misanthropy is natural: "misanthropy is a natural condition of cities, one which cannot be avoided and will not go away." [3]

In this paper, we explore not only how urbanization affects human beings, but specifically, how it can Yet an up to date empirical test is missing–we explore quantitatively this novel area–can urbanization lead to misanthropyor the , a dislike for humankind ?

There has been only two studies exploring urbanism and misanthropy, and both are outdated and limited. Smith (1997) only reports simple bivariate correlation among dozens of other bivariate correlations in a General Social Survey technical report. [3] Wilson (1985) focus on urbanicity, but examines 1972-1980 GSS data, controls for only a handful of variables, and does not show trends over time. One technical problem with Wilson (1985) is that he assumed that the urbanicity measures were continuous, but they are not. We use the same measures from the General Social Survey (GSS): SRCBELT, which is at best ordinal, and XNORCSIZ which is clearly not even at the ordinal level of measurement.[3] Arguably, like other contemporary social scientists,[3] Wilson has a slight urban bias—he seems to under-value and to discount urban problems. Likewise, Wilson (1985) takes a different perspective—narrow sociological—than ours, which is broader and interdisciplinary.

Urban Misanthropy

Misanthropy and Urbanism

"Here is the great city: here have you nothing to seek and everything to lose"–Nietzsche

Misanthropy stems from the Greek words *misos*, which means "dislike or hate," and *anthropos*, which means "humans." Essentially, misanthropy Misanthropy refers to the lack of faith in others and the dislike of people in general. Studies have shown that misanthropy reduces people's desire to invest and to be involved in their communities and may remove social bonds that deter people from harming others (Weaver 2006, Hirschi and Gottfredson 1993, Fafchamps and Minten 2006, Walters and DeLisi 2013). As a result,misanthropy is correlated with dysfunctional and animus behaviors such as homophobia, sexism, racism, and ageism (Cattacin et al. 2006). Thus, the literature suggest that misanthropy is predicted by negative experiences and worldview, which can have a harmful effect on human relationships. [3] The underlying question driving our research is , how Misanthropy is a critical judgement on human life caused by failings that are "ubiquitous, pronounced, and entrenched" (Cooper 2018, p. 7). A misanthrope could consider his fellow men "wicked and evil," "devilish," "obscene," "putrescent," "packages of rotten tripe" (Cooper 2018, p. 7).

Socrates defines misanthropy in such terms: misanthropy develops when one puts complete trust in somebody, thinking the person to be absolutely true, sound, and reliable, only to later discover that the person is deceitful, untrustworthy, and fake. And when this happens to someone often... they end up... hating everyone. (cited in Melgar et al. 2013).

American intellectuals almost universally expressed ambivalence or animosity toward city life, some even describing the city as "a cancer on the body of the state" (White and White 1977, p. 235). White and White (1977) is a wonderful summary of this intellectual

[3] More recently, some have promoted cities as the best places to live. A recent example is the bestselling, "Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier" (Glaeser 2011). For a critique of this recent pro-urbanism book see Okulicz-Kozaryn (2015b), Peck (2016)

[3] The report is published in a journal, but it is an exact carbon copy of a "GSS Topical Report No. 29" that is mostly a listing of correlations with annotations.

[3] Wilson (1985) explicitly states that xnorcsiz is an ordinal variable. We disagree: one cannot really say whether a suburb is larger than an unincorporated large area and smaller than an area of 50 thousand people.

[3] For instance, Veenhoven (1994), Meyer (2013), Fischer (1982).

[3] For an elaboration on misanthropy see Rosenberg (1956, 1957), Smith (1997) and Wilson (1985)–the last two also discuss urbanicity in conjunction with misanthropy.

history. Interestingly, many of the urban critics lived and wrote in cities,[3] e.g., Socrates in Athens, Franklin in Boston and Philadelphia, Wright in Chicago, and authors of this paper live in Philadelphia and New York City.

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How can cities produce misanthropy? There are at least several pathways or mechanisms. The most critical and illuminating observations are classics–we start building our argument by laying out classic theoretical background.

Early sociologists proposed that urbanization created malaise due to the core characteristics of cities: increased population size created anonymity and impersonality, density created sensory overload and withdrawal from social life, and heterogeneity led to anomie and deviance (see Park et al. ([1925] 1984), Simmel (1903), Tönnies ([1887] 2002) and Wirth (1938)), and also led to lower trust and wellbeing Putnam (2007), Okulicz-Kozaryn (2015a), Herbst and Lucio (2014), Postmes and Branscombe (2002), Vogt Yuan (2007), Smelser . According to classical urban sociological literature, there are three defining characteristics of urbanicity: size, density, and heterogeneity (Wirth 1938). Throughout ~~most~~ virtually all of our evolutionary history, humans have lived in small ~~homogenous groups with low density~~ low density homogenous groups. As hunters gatherers humans lived in small bands of 50 to 80 people, later ~~on~~ in simple horticultural society in groups of 100 to 150 people, and in more advanced society these groups reached five to six thousand people (Maryanski and Turner 1992). Hence, unlike other species like ants and bees, [4] living in heterogenous, dense, and large settlements (city living) is simply unnatural to human beings. Human nature is unlike that of bees: by one estimate we're 90% chimp and only 10% bee (Haidt 2012).

~~A significant problem in cities is crowding which forces a large number of people to live in close proximity (household crowding) and in a small amount of space (residential crowding).Experiments with rats have shown that when crowded, rats become more stressed, aggressive, andend up killing each other (Calhoun 1962), which is often what happens when you cram animals together in confined spaces. Similar to other species, humans are also harming and killing each other at an increased rate in places with a high population density—crime increases with population size (Bettencourt and West 2010), and crowding is associated with higher levels of~~ Some research indicates that density and/or crowding have negative consequences such as increased stress, depression, and ~~aggression (Regoeczi 2008). Although it seems evident that crowding can be harmful to almost all animals and species, this is often overlooked with respect to humans, particularly in the urban studies literature where some argue that the more people, the better (e.g., Glaeser 2011).~~ aggresion. But evidence is mixed, and discussion is postponed to the appendix. There is, however, remarkably consistent evidence that crime, traffic congestion, and incidence of infectious diseases do increase with population size (Bettencourt et al. 2010, Bettencourt and West 2010, Bettencourt et al. 2007). While in principle cities probably do not have to have these problems, they do.

In terms of heterogeneity, ~~studies have shown that~~ humans have ingroup preference or homophily, and accordingly, lack preference or dislike heterogeneity ~~(Smith et al. 2014, McPherson et al. 2001, Bleidorn et al. 2016)~~(Smith et al. 2014, McPherson et al. 2001, Bleidorn et , which is a key defining feature of cities (Wirth 1938).

How else can cities cause misanthropy? It is well-known that city life causes cognitive overload, stress, and coping (Simmel 1903, Milgram 1970, Lederbogen et al. 2011). An overloaded system can suppress stimuli resulting in blase attitude (Simmel 1903)—city life can cause withdrawal, impersonality, alienation, superficiality, transitiveness, and shallowness (Wirth 1938). Similarly, city life intensifies cunning and calculated behavior (Tönnies [1887] 2002), estrangement, antagonism, disorder, vice, and crime (Milgram 1970, Park 1915, Park et al. [1925] 1984, Bettencourt and West 2010), which can lead to aggressive responses when interacting with others. Urbanism negatively influences the quality of nearly all social relationships Wilson (1985).

~~Either way, the~~ All of the above suggests that an urbanite becomes more distant from or hostile toward other human beings. Urban life is being "lonely in the midst of a million" (Twain), "lonesome together" (Thoreau), alienated (Wirth 1938, Net-

[3] We thank anonymous reviewer for this point. Franklin was not anti-urban like Thoreau or Jefferson, but he did note problems assiociated with urbanness (White and White 1977, e.g., p32).

[4] ~~Human nature is unlike that of bees: by one estimate we're 90% chimp and only 10% bee (Haidt 2012).~~

tler 1957), "awash in a sea of strangers" (Merry cited in Wilson 1985, p. 99) in a "mosaic of little worlds which touch, but do not interpenetrate" (Park et al. [1925] 1984, p. 40). Urbanites also in some ways tend to be ill-mannered and unreliable (e.g., Okulicz-Kozaryn 2015b, Okulicz-Kozaryn and Valente 2017). As a result, urban misanthropy may emerge.

~~Arguably, urbanites are not only lonesome strangers but also, plainly speaking, ill-mannered and unreliable (e.g., Okulicz-Kozaryn 2015b, Ok . Socrates defines misanthropy in such terms: misanthropy develops when one puts complete trust in somebody, thinking the person to be absolutely true, sound, and reliable, only to later discover that the person is deceitful, untrustworthy, and fake. And when this happens to someone often ... they end up. .. hating everyone. (cited in Melgar et al. 2013).~~

Thus, we hypothesize that ~~*urbanicity increases misanthropy.*~~ urbanicity increases misanthropy.

Urbanicity-misanthropy association is a novel area of research and we know little so far. There have been only two studies that have related in any quantitative way urbanism and misanthropy. Importantly, the first study doesn't concern itself with the relationship. Smith (1997) only lists a simple bivariate correlation among dozens of other bivariate correlations in a General Social Survey technical report. The report is published in a journal, but it is an exact carbon copy of a "GSS Topical Report No. 29" that is mostly a listing of correlations with annotations. Hence, the only one study focusing on urbanicity-misanthropy relationship is Wilson (1985). Wilson (1985) is 35 years old (actually unavilable online) and cited only six times as of 2020.This is a major reason for and contribution of our study–ours is the second study focusing on this topic. Such gap in the literature is rare.

Wilson (1985) uses now dated 1972-1980 GSS dataset, controls for only a handful of variables, and does not show trends over time. Arguably, like other contemporary social scientists Veenhoven (e.g., 1994), Meyer (e.g., 2013), Fischer (e.g., 1982)., Wilson has at least a slight urban bias–he seems to under-emphasize and discount urban problems. Likewise, Wilson (1985) takes a different perspective–narrow sociological–than ours, which is broader and interdisciplinary.

While the literature on urbanicity-misanthropy is almost non-existent, there is somewhat related literature.We will now dvelve briefly into these other literatures that may help to shed some more light. Steve Pile in his colorful writings about cities often inovkes notions of "vampires" and "werewolves" Pile (2005a,b), Pile et al. (1999). Clearly, both folklore characters indicate (at least in some ways) a dislike of humankind, a misanthropy. Steve Pile observes that cities are haunted by their past, full of its ghosts. In that sense misanthropy may arise not just due to current density and overload, but also due to city's past. Old cities carry melancholia (Pile 2005b). Densest and largest cities tend to be old. Melancholy can arguably translate into misanthropy.

Nietzsche, one of the greatest observers of human condition, was a misanthrope himself, at least in some ways (e.g., Avramenko 2004) . Arguably his disappointments with Wagner and Salome have contributed, but it is also reasonable to argue that city life contributed as well. And importanly he does make a clear argument against the city, and especially its most crowded area, a marketplace, and makes a clear overall impression of dislike of a humankind in his vivid description (e.g., "The Flies in the Market-Place" Nietzsche and Parkes 2005) .

Last but not least, while there seem to be a clear misanthropic side to cities, many try to avoid it and discount it and point in the other direction. This may explain why there is virtually no research on urbanicity-misanthropy link. It is well put by Nigel Thrift, there is "a more deep-seated sense of misanthropy which urban commentators have been loath to acknowledge, a sense of misanthropy which is too often treated as though it were a dirty secret" (Thrift 2005, p. 134):

> *The misanthropic city*
> Cities bring people and things together in manifold combinations. Indeed, that is probably the most basic definition of a city that is possible. But it is not the case that these combinations sit comfortably with one another. Indeed, they often sit very uncomfortably together. Many key urban experiences are the result of juxtapositions which are, in some sense, dysfunctional, which jar and scrape and rend. What do surveys show contemporary urban dwellers are most concerned by in cities? Why crime, noisy neighbours, a whole raft of intrusions by unwelcome others. There is, in other words, a **misanthropic** thread that runs through the modern city, a distrust and avoidance of precisely the others that many writers

feel we ought to be welcoming in a world increasingly premised on the mixing which the city first brought into existence. (Thrift 2005, p. 140 ("misanthropy" bolded by us)

Urban Triumph

There is urban triumph–announces the bestselling "Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier" (Glaeser 2011). While Glaeser (2011) is remarkably misguided (Okulicz-Kozaryn 2015b, Peck 2016), there are obviously many bright sides to city life: freedom, productivity, research and innovation, economic growth, wages, and multiple efficiencies related to density in transportation, public goods provision, and lower per capita pollution Tönnies ([1887] 2002), O'Sullivan (2009), . Also note that diversity can have a highly positive impact on economic performance (e.g., Rodríguez-Pose and von Berlepsch 2019), which in turn has positive effect on other outcomes. In general, there is no doubt that cities are economic engines of today's economy.

It is also instructive to observe how academic thinking about cities has swung in pro-urban direction. The classical sociological urban theory (Wirth 1938, Milgram 1970, Park 1915, Park et al. [1925] 1984, Simmel 1903, Tönnies [1887] 2002) gave way to sub-cultural theory (Fischer 1975, 1995, Wilson 1985, Palisi and Canning 1983). Debate about optimal size of city (Richardson 1972, Singell 1974, Alonso gave way to the-bigger-the-better thinking (Glaeser 2011). There is also now a pro-urban attidude among many people, as exemplified by Millenial rediscovey of city Okulicz-Kozaryn (2018).

Method

Data

All variables come from the US General Social Survey (GSS; `http://gss.norc.org`). The GSS is a cross-sectional, nationally representative survey, administered annually since 1972 until 1994 when it became biennial. The unit of analysis is ~~the~~ an individual and data are collected in face-to-face, in-person interviews (Davis et al. 2007). The full dataset contains about 60 thousand observations pooled over 1972-2016~~, but the sample size will vary depending on the variables used and missing data (as evident in Tables 1, 2 and 3).~~ . All variables were recoded in such a way that a higher value means more.

As explained in the next subsetion, the dependent variable, misanthropy, is continuous. Hence, we simply use ordinary least squares (OLS) to analyze the relationship between misanthropy and urbanicity. [4]

Misanthropy

We measure misanthropy, the dislike of humankind, by a ~~three-item scale adapted from~~ three item Rosenberg's ~~five item~~ misanthropy index (Rosenberg 1956), based on respondents' answers to three questions (Smith 1997):

TRUST. "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" $1 =$"cannot trust," $2 =$ "depends," $3 =$ "can trust."

FAIR. "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?" $1 =$"take advantage," $2 =$ "depends," $3 =$ "fair."

HELPFUL. "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?"

[4] We do not see any need to use categorical or limited dependent variable modeling techniques. We do not have panel data. Multilevel techniques are not useful either as GSS is only representative of large census regions, and we do not have the restricted GSS data with finer geographical information.

$1 =$"lookout for self," $2 =$ "depends," $3 =$ "helpful."

Rosenberg defines misanthropy as general uneasiness nd apprehensivness toward or dislike of personally unknown others Rosenberg (1956)

Using these questions, we utilized factor analysis with varimax rotation to produce an index, and we reversed it so that it measures misanthropy. Cronbach's alpha is .67. Note that the distributions of these, as well as the descriptive statistics for all other variables, are in supplementary material.

This measurement encompasses "faith in people," "attitudes towards human nature," and an "individual's view of humanity." Although, much controversy about the assessment of misanthropy exists in the literature, the Rosenberg scale has become the standard measure for self-reported misanthropy and was designed to assess one's degree of confidence in the trustworthiness, goodness, honesty, generosity and brotherliness of people in general (Rosenberg 1956). The Rosenberg Misanthropy Scale has been a cornerstone on the GSS since 1972, and studies have shown that the measurement is not contaminated by social desirability bias (Ray 1981). The Rosenberg Misanthropy scale is not only mainstream, but also the most popular and widely cited measurement. Some authors, e.g., Wuensch et al. (2002) have used other scales, but their approaches are disjoint from the mainstream literature, and there is not much discussion of the concept or measurement that they used in their research.

As per the survey questions, strictly speaking, it is not the dislike of "all people," but of "most people" that we are measuring. Wilson (1985) suggests it is dislike of strangers, specifically. Likewise, recently Delhey et al. (2011) have argued that "most people" predominantly connotes out-groups. [5] ~~Therefore, the data must be undertaken with caution.~~Also, note that this relates to homophily/ingroup theory—dislike of outgroup typically means relative preference of ingroup. ~~Using these questions, we utilized factor analysis with varimax rotation to produce an index, and we reversed it so that it measures misanthropy. Cronbach's alpha is .67. Note that the distributions of these, as well as the descriptive statistics for all other variables, are in supplementary material.~~

Urbanism

~~The main explanatory variable is *urbanism* or the size of a place.~~One technical problem with Wilson (1985) is that he assumed that the urbanicity measures were continuous, but they are not. We use the same measures from the General Social Survey (GSS): SRCBELT, which is at best ordinal, and XNORCSIZ which is clearly not even at the ordinal level of measurement.Wilson (1985) explicitly states that xnorcsiz is an ordinal variable. We disagree: one cannot really say whether a suburb is larger than an unincorporated large area and smaller than an area of 50 thousand people.

The size of a place is defined in three ways to show that the results are robust to the definition. First, it is measured using deciles of population size (SIZE). Deciles are used to investigate if there are any nonlinear effects on misanthropy.

Then, two other variables are used to measure urbanism under their original GSS names: XNORCSIZ and SRCBELT. Both variables categorize places into metropolitan areas, big cities, suburbs, and unincorporated areas. The advantage of SIZE is that it allows us to calculate a misanthropy gradient by exact size of settlement. XNORCSIZ and SRCBELT take into account the fact that populations cluster at different densities (e.g., suburbs are less dense than cities). The GSS does not provide a density variable.

The SRC BELTCODE measurement is arguably the best fitting to illustrate the urban vs. rural divide: the divide is between metropolitan areas vs. smaller areas (Hanson 2015), and SRC BELTCODE identifies the MSAs (metropolitan statistical areas). The GSS codebook descriptions follow:

SIZE. This code is the population to the nearest 1,000 of the smallest civil division listed by the U.S. Census (city, town, other incorporated area over 1,000 in population, township, division, etc.) which encompasses the segment. If a segment falls into more than one locality, the following rules apply in determining the locality for which the rounded population figure is coded. If the predominance

[5] ~~Also, note that this relates to homophily/ingroup theory—dislike of outgroup typically means relative preference of ingroup.~~

of the listings for any segment are in one of the localities, the rounded population of that locality is coded. If the listings are distributed equally over localities in the segment, and the localities are all cities, towns, or villages, the rounded population of the larger city or town is coded. The same is true if the localities are all rural townships or divisions. If the listings are distributed equally over localities in the segment and the localities include a town or village and a rural township or division, the rounded population of the town or village is coded.

XNORCSIZ. Expanded N.O.R.C. size code. a. A suburb is defined as any incorporated area or unincorporated area of 1,000+ (or listed as such in the U.S. Census PC (1)-A books) within the boundaries of an SMSA but not within the limits of a central city of the SMSA. Some SMSAs have more than one central city, e.g., Minneapolis-St. Paul. In these cases, both cities are coded as central cities. b. If such an instance were to arise, a city of 50,000 or over which is not part of an SMSA would be coded '7'. c. Unincorporated areas of over 2,499 are treated as incorporated areas of the same size. Unincorporated areas under 1,000 are not listed by the Census and are treated here as part of the next larger civil division, usually the township.

SRCBELT. SRC beltcode. The SRC belt code (a coding system originally devised to describe rings around a metropolitan area and to categorize places by size and type simultaneously) first appeared in an article written by Bernard Laserwitz (American Sociological Review, v. 25, no. 2, 1960), and has been used subsequently in several SRC surveys. Its use was discontinued in 1971 because of difficulties particularly evident in the operationalization of "adjacent and outlying areas." For this study, however, we have revised the SRC belt code for users who might find such a variable useful. The new SRC belt code utilizes "name of place" information contained in the sampling units of the NORC Field Department.

Controls

In the choice of the control variables we follow Welch et al. (2007) and especially Smith (1997). The higher the social standing, the more favorable view of others, thus we control for income, education, and race. Social class literature suggests that individuals' social class should be assessed by using both objective (e.g., income and education) and subjective indicators (e.g., Kraus et al. 2009).[5] Thus, a control for people's perceived social class will be included as well.

Negative experiences are likely to increase misanthropy, therefore we control for fear of crime (there is no good measure for actual victimization in the GSS). Crime is important because the larger the place, the more crime (Bettencourt and West 2010), and the more crime, the more misanthropy (Wilson 1985). We also control for unemployment, self-reported health and age. Since divorce is a predictor of misanthropy, we control for it and other marital statuses as well. Misanthropy should be higher among cultural groups and minorities that have been discriminated against, so we also control for race, being born in the United States, and religious denomination. Religious belief should reduce misanthropy. Misanthropy should be lower among older people, though some studies find a curvilinear relationship, therefore we control for age and age^2. Studies also show that men tend to be more misanthropic, so we control for gender. Recent movers should be more misanthropic. We do not have a good control for recent moving, but we use a proxy for international moving by controlling for being born in the US. Also, misanthropy should be higher in the South, therefore we included a region "South" dummy variable.

In addition, we control for subjective wellbeing and health—the goal is to alleviate possible problem of spuriousness. It may be not the size of a place that causes higher misanthropy but it may be lack of success, unhappiness, or poor health that makes a person both move to a city and dislike other people. Concurrently, liberals and immigrants are more likely to live in cities and both groups are less satisfied with their lives (Berry and Okulicz-Kozaryn 2011, Okulicz-Kozaryn et al. 2014) and potentially more misanthropic. Thus, we control for political ideology and immigration status.

[5]We thank an anonymous reviewer for this important point. Subjective class correlates with education and income moderately at about .4 (either continuous or polychoric). On one hand, subjective class and urbanicity are likely to be confounded. On the other hand, it turns out that correlations of urbanicity measures and subjective class are very small, below .1 (either continuous or polychoric). The social class item in the GSS reads: "If you were asked to use one of four names for your social class, which would you say you belong in: the lower class, the working class, the middle class, or the upper class?" and is coded from 1 (lower) to 4 (upper). We will just treat it as a control variable and enter it as a continuous variable without using a set of dummies.

We would like to highlight that there is a strong need to properly control for quality of life in cities and rural areas. A key measure is income, which is controlled for. We even control directly for Subjective Wellbeing (SWB). And we include fear of crime, one of the most imoportant confounders–crime increases misanthopy and tends to be higher in cities.

Data were pooled over many years, and hence we include year dummies.

Results

Table 1 shows the regression results. We use three measures of urbanicity, and each urbanicity measure is entered as a set of dummy variables to explore nonlinearities and the base case is the smallest place in the case of SIZE and SRCBELT and the second smallest category on XNORCSIZ: "<2.5k, but not countryside." Coefficients of interest are those on the ~~biggest~~ largest places such as the second largest category "192-618k", and especially the largest ones "618k-" in table 1, and corresponding the very largest and second largest places in tables 2 and 3.

The first three columns in each table (a1, b1, c1) report basic results without any control variables. For all three urbanicity measures, the largest increase in misanthropy occurs in the largest place. In the case of SIZE and SRCBELT, the second largest effects tend to be on the second largest place. XNORCSIZ is more uneven and the second largest place does not have the second largest effect. Interestingly, in the case of XNORCSIZ, in addition to largest cities, the countryside (variable "country") is quite misanthropic, perhaps countrymen are not used to swarms of people or perhaps they are countrymen because they dislike people.

The second columns (a2, b2, c2) in the tables add controls following Welch et al. (2007) and Smith (1997)–notably we control for objective and subjective social class. An interesting result on the XNORCSIZ variable is misanthropic suburbs, "places of nowhere," thus confirming Kunstler (2012)'s critique of suburbs. What is worth noting is that, in general, in more elaborate specifications, we find that the larger the place, the more misanthropy.

The addition of marital status in model 3 attenuates the effect slightly. Political ideology, subjective wellbeing (SWB) and health controls were postponed till model 4 because there are many missing observations.[6] The addition of these controls in model 4 attenuates the slopes considerably by about a third or half. The "192-618k" size decile is similar in magnitude to smaller places–they are all more misanthropic than the base case, which in this case is places smaller than 2k. And "618k-" is markedly larger, about twice as large as "192-618k"–as is the case with SWB–it is the very largest places that differ from smaller places (Okulicz-Kozaryn 2015b).

The final most elaborate specifications also show no significant misanthropy difference for the 2nd largest places–these results contradict earlier results where the second largest places were the second most misanthropic. Therefore results for the second largest places should be interpreted with care, and while the fullest specifications are ~~at~~ the least biased in terms of omitted variables, the sample size is less than half of the more basic models due to missing observations on additional variables. Furthermore, the most elaborate specifications are rather over-saturated models with too many controls and the collinearity~~and sample size is much smaller than in earlier specifications...~~ Hence, lower statistical significance and smaller effect sizes are somewhat expected.

According to the well laid out argument in Wilson (1985), ~~probably~~ the most complete quantitative treatment of the urbanicity-misanthropy nexus to date, [7] there are two key variables of interest: crime and race. Like Wilson, for lack of a better variable, we are using fear of crime as a proxy in our analysis (AFRAID TO WALK AT NIGHT IN NEIGHBORHOOD), which is thought to increase misanthropy and correlate with urbanicity. Therefore, the inclusion of this variable should attenuate heavily the urbanicity-misanthropy relationship, and it does in model a4a. Wilson (1985) also argues that urban misanthropy is more common among whites than minorities. Inclusion of WHITE HOUSEHOLD dummy (without AFRAID TO WALK AT NIGHT IN NEIGHBORHOOD) in a4b has a similar effect to AFRAID TO WALK AT NIGHT IN NEIGHBORHOOD. Finally in model a4c both variables are entered together, and the urbanicity

[6] these are some of he les simportant cortols missing from smith and wilson (check!) and more of a robustness check–these controls are not essential, if anything they oversaturate the model, but they are a useful robustness check; in addition there are many observations missing on them–another reason to add them as last, because they cut the available sample size

[7] ~~Yet, Wilson (1985) is more than 20 years old and cited only seven times.~~

effect is heavily attenuated and barely significant. Results for the other two measures of urbanicity shown in tables 2 and 3 are similar. One difference is that in table 2, the smallest areas ("countryside") are slightly more misanthropic than the base case, "smaller than 2.5k but not countryside."

In the most elaborate models, a4c and b4c (but not c4c), the largest places remain misanthropic, yet the magnitude is not greater than that for mid-sized places, suburbs, and even the countryside. Hence, the smallest places, housing hundreds or a couple of thousand people, but not more than about 10 thousand people or the countryside, are the most liking of humankind. As observed in model c4c, it is still the very largest places that are markedly different from other places. Importantly, as argued here, SRCBELT is the variable that measures best the urban-rural divide.

Political ideology, marital status, health, SWB, and notably race and fear of crime explain away much of the city disadvantage, but not all of it. Hence, the conclusion is that similar to studies examining SWB in urban areas (Okulicz-Kozaryn and Mazelis 2016), it is cities, themselves, their core characteristics, and not city problems that are related to misanthropy.

Indeed, even if the results were insignificant, they would be still worth ~~reporting–one could~~ reporting–many would think that there is less misanthropy in cities–clearly we are in the midst of a pro-urbanism period, where it is fashionable to argue about city benefits (e.g., Glaeser 2011). However, the results show that there is no such benefit with respect to misanthropy–cities are at least slightly more misanthropic than other places.

Why did several midsize categories score relatively high on misanthropy? We do not have an explanation for this phenomenon. Perhaps, following Okulicz-Kozaryn (2016)'s rationale, such places strip people of the naturalness found in the smallest places, and yet do not provide amenities and the benefits found in the largest places.

Note that the effect sizes are considerable–all tables report beta coefficients and the effect size of the largest place is about as large as half of the effect of income. It is important to note again that city living has an enormous effect size due to the urbanization scale–each year cities grow by ~~hundreds~~ tens of millions of people. To summarize, we find support for our initial hypothesis that urbanicity is related to increased misanthropy.

Table 1: OLS regressions of misanthropy. Beta (fully standardized) coefficients reported. All models include year dummies. Size deciles (base: <2k).

	a1	a2	a3	a4	a4a	a4b	a4c
2-4k	0.01	0.02**	0.01**	0.01*	0.02	0.01*	0.01
4-8k	0.02***	0.03***	0.03***	0.03***	0.02**	0.02***	0.02
8-14k	0.01**	0.04***	0.03***	0.03***	0.03***	0.02***	0.02**
14-24k	0.00	0.03***	0.03***	0.02***	0.02*	0.02**	0.01
24-41k	0.01	0.04***	0.03***	0.02***	0.02**	0.02**	0.02*
41-79k	0.01*	0.04***	0.04***	0.03***	0.02*	0.02**	0.01
79-192k	0.03***	0.04***	0.04***	0.03***	0.01	0.02**	-0.00
192-618k	0.04***	0.05***	0.05***	0.04***	0.02**	0.02***	0.01
618k-	0.09***	0.09***	0.09***	0.07***	0.05***	0.05***	0.02**
South	0.12***	0.10***	0.09***	0.10***	0.09***	0.09***	0.07***
subjective class identification		-0.10***	-0.10***	-0.09***	-0.09***	-0.08***	-0.08***
family income in $1986, millions		-0.08***	-0.07***	-0.05***	-0.04***	-0.05***	-0.04***
protestant		-0.01	-0.01	0.00	0.00	-0.01	-0.01
catholic		-0.02***	-0.02***	-0.01	-0.02*	-0.01	-0.02
unemployed		0.01**	0.01**	0.00	0.00	0.00	0.00
age		-0.32***	-0.34***	-0.39***	-0.47***	-0.41***	-0.50***
age squared		0.13***	0.14***	0.18***	0.25***	0.20***	0.28***
highest year of school completed		-0.24***	-0.24***	-0.22***	-0.21***	-0.22***	-0.20***
male		0.03***	0.03***	0.02***	0.04***	0.03***	0.05***
married			0.00	0.00	0.00	0.00	0.00
widowed			0.02***	0.01	-0.01	0.00	-0.01
divorced			0.04***	0.02***	0.02*	0.02***	0.02*
separated			0.04***	0.03***	0.02***	0.02***	0.02**
never married			0.01	-0.01	-0.02**	-0.02**	-0.03***
conservative				0.00	0.01	0.01	0.01
liberal				-0.03***	-0.02**	-0.03***	-0.02***
born in the U.S.				-0.02***	-0.02**	-0.00	-0.00
SWB				-0.13***	-0.14***	-0.12***	-0.13***
afraid to walk at night in neighborhood					0.09***		0.09***
white household						-0.12***	-0.12***
N	38236	33549	33545	27522	14034	27082	13799

*** p<0.01, ** p<0.05, * p<0.1; robust std err

Table 2: OLS regressions of misanthropy. Beta (fully standardized) coefficients reported. All models include year dummies. Xnorcsiz (base: <2.5k, but not country).

	b1	b2	b3	b4	b4a	b4b	b4c
countryside	0.03***	0.03***	0.03***	0.04***	0.05***	0.04***	0.04***
2.5-10k	0.02***	0.02***	0.02***	0.02***	0.02**	0.02**	0.02
10-50k	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.02**
uninc med	0.00	0.02***	0.02***	0.03***	0.03**	0.03***	0.03**
uninc lrg	0.00	0.03***	0.03***	0.03***	0.03**	0.02***	0.02*
med sub	0.02**	0.04***	0.04***	0.05***	0.05***	0.04***	0.04***
lrg sub	0.03***	0.08***	0.08***	0.08***	0.07***	0.06***	0.05***
50-250k	0.04***	0.05***	0.05***	0.05***	0.03**	0.03***	0.01
gt 250k	0.10***	0.10***	0.10***	0.09***	0.07***	0.07***	0.04***
South	0.12***	0.10***	0.09***	0.10***	0.09***	0.09***	0.07***
subjective class identification		-0.10***	-0.10***	-0.09***	-0.09***	-0.08***	-0.08***
family income in $1986, millions		-0.08***	-0.07***	-0.06***	-0.05***	-0.05***	-0.04***
protestant		-0.01	-0.01	0.00	0.00	-0.01	-0.01
catholic		-0.02***	-0.02***	-0.01	-0.02*	-0.01	-0.02
unemployed		0.01**	0.01**	0.00	0.00	0.00	0.00
age		-0.32***	-0.34***	-0.39***	-0.47***	-0.41***	-0.50***
age squared		0.12***	0.13***	0.17***	0.25***	0.20***	0.28***
highest year of school completed		-0.24***	-0.24***	-0.22***	-0.21***	-0.22***	-0.20***
male		0.03***	0.03***	0.02***	0.04***	0.03***	0.05***
married			0.00	0.00	0.00	0.00	0.00
widowed			0.02***	0.01	-0.01	0.00	-0.01
divorced			0.04***	0.02***	0.02*	0.02***	0.02*
separated			0.04***	0.03***	0.02***	0.02***	0.02**
never married			0.01	-0.01	-0.02**	-0.02**	-0.03***
conservative				0.00	0.01	0.01	0.01
liberal				-0.03***	-0.02**	-0.03***	-0.03***
born in the U.S.				-0.02***	-0.02**	-0.00	-0.00
SWB				-0.13***	-0.14***	-0.12***	-0.13***
afraid to walk at night in neighborhood					0.09***		0.09***
white household						-0.12***	-0.12***
N	38236	33549	33545	27522	14034	27082	13799

*** p<0.01, ** p<0.05, * p<0.1; robust std err

Table 3: OLS regressions of misanthropy. Beta (fully standardized) coefficients reported. All models include year dummies. Srcbelt (base: small rur).

	c1	c2	c3	c4	c4a	c4b	c4c
small urb	-0.01	0.02**	0.02*	0.01*	0.02*	0.01	0.02
13-100 sub	-0.01	0.04***	0.04***	0.03***	0.02*	0.02***	0.02
1-12 sub	-0.00	0.06***	0.05***	0.04***	0.04***	0.03***	0.03***
13-100 msa	0.03***	0.04***	0.04***	0.04***	0.02	0.02***	-0.00
1-12 msa	0.08***	0.09***	0.08***	0.07***	0.05***	0.05***	0.03***
South	0.12***	0.10***	0.10***	0.10***	0.09***	0.09***	0.08***
subjective class identification		-0.10***	-0.10***	-0.09***	-0.09***	-0.08***	-0.08***
family income in $1986, millions		-0.08***	-0.07***	-0.06***	-0.05***	-0.05***	-0.04***
protestant		-0.01	-0.00	0.00	0.01	-0.01	-0.01
catholic		-0.02***	-0.02***	-0.01*	-0.02*	-0.01	-0.02
unemployed		0.01**	0.01**	0.00	0.00	0.00	0.00
age		-0.33***	-0.35***	-0.39***	-0.47***	-0.41***	-0.50***
age squared		0.13***	0.14***	0.18***	0.25***	0.21***	0.29***
highest year of school completed		-0.24***	-0.24***	-0.22***	-0.21***	-0.22***	-0.20***
male		0.03***	0.03***	0.02***	0.04***	0.03***	0.05***
married			0.00	0.00	0.00	0.00	0.00
widowed			0.02***	0.01	-0.01	0.00	-0.01
divorced			0.04***	0.02***	0.02*	0.02***	0.02*
separated			0.04***	0.03***	0.02***	0.02***	0.02*
never married			0.01	-0.01	-0.02**	-0.02***	-0.03***
conservative				0.00	0.01	0.01	0.01
liberal				-0.03***	-0.02**	-0.03***	-0.03***
born in the U.S.				-0.02***	-0.01*	-0.00	0.00
SWB				-0.13***	-0.14***	-0.12***	-0.13***
afraid to walk at night in neighborhood					0.09***		0.09***
white household						-0.12***	-0.12***
N	38236	33549	33545	27522	14034	27082	13799

*** p<0.01, ** p<0.05, * p<0.1; robust std err

A look over time

Next, we complement our analysis by exploring the relationship between misanthropy and urbanicity over time. The advantage of the GSS is that it allows us to compare a span of over four decades. Figure 1 shows misanthropy by size of place over time. Overall, misanthropy remained highest in large cities until recently. Yet, around 2000, the trends have changed–misanthropy for largest cities (>250k) started to decline, and it started to increase steeply for the smallest places (<10k). Over the four decades, misanthropy has been increasing steadily for medium sized places. Hence, the overall urban misanthropy we observed is due to earlier time periods. These patterns ~~hold~~ are similar when controlling for predictors of misanthropy. Predicted values are plotted in figure 2, based on the regression from column a3a from table 5 in the appendix. ~~Indeed, if anything, the predicted values graphed show even greater increase in misanthropy and greater convergence for all areas than the raw values in figure 1.~~ There is a convergence in misanthropy across urbanicity over time, with smallest places increasing their level of misanthropy most.

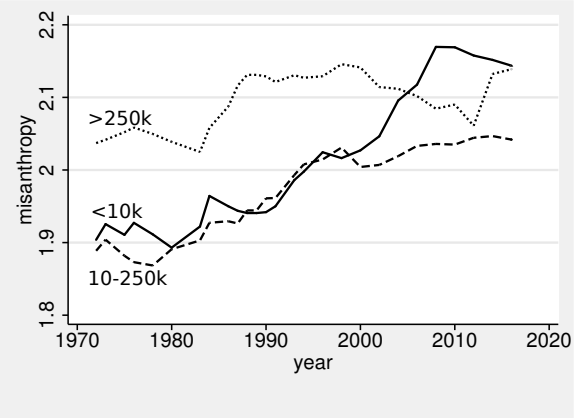

Figure 1: Misanthropy by size of population over time. Smoothened with moving average filter using 3 lagged, current, and 3 forward terms.

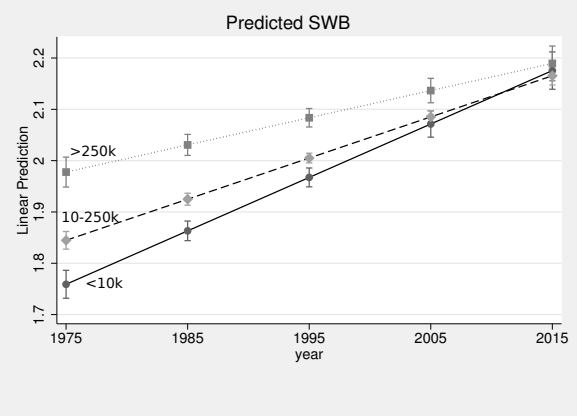

Figure 2: Misanthropy by size of population over time. Predicted values from regression from column a3a from table 5 in appendix. 95% CI shown.

Conclusion and Discussion

"Real misanthropes are not found in solitude, but in the world; since it is experience of life, and not philosophy, which produces real hatred of mankind." Giacomo Leopardi

"Whenever I tell people I'm a misanthrope they react as though that's a bad thing, the idiots. I live in London, for God's sake. Have you walked down Oxford Street recently? Misanthropy's the only thing that gets you through it. It's not a personality flaw, it's a skill." Charlie Brooker[7]

City living has an enormous effect on humanity–the world is urbanizing ~~fast, and each~~ at astonishing pace–each year cities add ~~hundreds~~ tens of millions of people. Arguably the biggest divide is urban-rural, and it is important to investigate its multiple dimensions. In this article, we have focused on ~~misanthropy.~~a novel area, urbanicity-misanthropy nexus.[8]

Our evolutionary history (small group living), psychological theory (homophily or ingroup preference), and classical urban sociological theory, all suggest that human dislike for other humans should be observed in most dense and heterogeneous places like cities. Our

[7] ~~Note this~~ This echoes Simmel's blase attitude–in order to survive in a city, one must withdraw; see also Milgram (1970) and Lederbogen et al. (2011).

[8] For a long time social scientists have tried to understand how urbanization affects human beings. Yet the most sharp and critical observations were published decades ago–it is our contribution to connect with the illuminating classical studies amid current pro-urbanism. We offer the first up to date quantitative test based on classic theoretical background.

results mostly agree: misanthropy is lowest in smallest settlements (but not in the countryside), and the effect size of urbanicity is about half of that of income. ~~Overall, our results contradict recent pro-urbanism arguments on the advantages of city living, although recently, smaller areas have become much more misanthropic than in the past~~There are two important caveats. The urban misanthropy thesis holds up robustly for the large cities only (larger than several hundred thousand people). The second caveat is that level of misanthropy in smaller areas has just now reached about the same level as in large cities. ~~It is important to note that~~ As a sidenote, our results are ~~very~~ similar to research examining subjective wellbeing (SWB) in cities–rural folks have also always been at an advantage when it ~~came~~ comes to SWB (at least since the US GSS started collecting data in 1972), but very recently this advantage has disappeared (Okulicz-Kozaryn 2018). We interpret this as evidence of a rural-urban divide and the fact that rural areas have been left behind (e.g., Fuller 2017, Hanson 2015).

As compared to the most complete study to date on the relationship between misanthropy and urbanicity, Wilson (1985), we use more data, ~~more~~ control variables, and ~~notably~~ levels of size variables without forcing untenable assumption of interval/ratio scale and linear effects~~; our~~. Our results do not necessarily contradict, but rather extend Wilson (1985): there is misanthropy in the largest places for everyone (we find more robust evidence than Wilson (1985); and concurrently confirm the finding by Fischer (1981) of a relatively strong relationship between community size and distrust). In addition, we also find that there is especially misanthropy for whites, and that rural misanthropy is on the rise.

As in any correlational study, we cannot claim causality. There are, however, reasons to believe that urbanism causes misanthropy. Size, density, and heterogeneity are theoretically linked to many negative emotions (Wirth 1938), and make general dislike for humankind, misanthropy, likely. Homophily and evolutionary arguments discussed earlier also point in the same direction. Furthermore, there is neurological evidence that city living is unhealthy to the human brain (Lederbogen et al. 2011) and experimental evidence that city living causes lower trust (Milgram 1970).

Reverse causality would not make sense: misanthropy or hatred of people, should not lead someone to live in places, like cities, ~~where there are a concentration of people,~~ unless one perhaps wants to harm them in some way, clearly these cases are rare.[9] This ~~rational~~ rationale should also exclude self-selection—if anything the opposite of misanthrope, people who love to be among many people, would choose to move to cities. This can also perhaps explain the result that while misanthropy is high in largest cities, it is also high in the smallest places of all: the countryside. [10] Arguably many people tired of urban crowds move to the countryside—the authors know personally many such people. It also happens among generally city-loving Millennials (e.g., Dewey 2017).

Can the relationship between urbanicity and misanthropy be spurious? Cities have many problems: notably urban poverty and urban crime–these problems could intensify misanthropy. In other words, if it were not for urban problems, then urbanicity would not cause misanthropy. There are many urban problems, and we cannot control for all of them, but we controlled for the key urban problem leading to misanthropy: fear of crime. We also controlled for personal income. But what about an ideal city, without problems and with all the amenities.

If there is a city with very low crime and very low levels of inequality and lots of parks, public spaces etc–is this still likely to have high levels of misanthropy? Probably. Because it is city itself, its core characteristics, size, density and heterogeneity that contribute to misanthropy. All large cities have high population by deinition, moderate-high or high density (as compared to smaller places), and are also relatively heterogenous as compared to smaller places, and these core characteristics are the likely drivers of misanthropy as explained throughout. Still, this would require a test–for the future research (we do not have such data) it would be useful to control for all these things–parks, public spaces, etc.

The magnitude of the effect of urbanicity is important to consider. There is evidence of a large magnitude effect on trusting behavior. In one experiment, trust differed several-fold between city and town, strikingly a larger difference than across gender–the

[9] Another potential reason for a misanthrope, or any non-conformist type, to live in a city is anonymity.

[10] ~~Arguably many people tired of urban crowds move to the countryside—the authors know personally such people, and there are even news reports of generally city-loving Millennials who are moving to the countryside (e.g., Dewey 2017).~~

trust benefit of being female over male is smaller than the benefit of town over city (Milgram 1970). While we do not find a very strong effect of urbanicity on misanthropy, we do find a substantial effect–about half of the income effect in our analysis.[10] Thus, we contradict Wilson (1985), who argued that there's only a small effect.[11]

Why are cities becoming less misanthropic and smaller places more misanthropic? We don't intrepret it as cities are improving their condition– misanthropy level is not declining in cities, but the convergence is due to increasing misanthropy in smaller areas–hence we intrepret it as smaller places left behind Okulicz-Kozaryn (2015b). One possible explanation is that rural folks are being discriminated by the urban elite. It is usually overlooked that arguably one of the biggest current social ~~divide~~ divides is urban-rural divide (Hanson 2015, 2017). There is clearly a rural resentment[11] as rural folks feel that they are being governed by an urbanized elite. More ~~study~~ research is needed to better understand this phenomenon.

Smith (1997) argued that the more subordinate a group is, and the more isolated the members of the group are, the greater the misanthropy; and that urbanicity has no direct impact on negativism. We disagree: while cities have never been subordinate, but always dominating (e.g., Okulicz-Kozaryn and Valente 2017),[12] there are multiple theoretical reasons to believe that cities in fact do increase negativism–for a recent review see Okulicz-Kozaryn (2015b).

Hence, our conclusions are congruent to those of Schilke et al. (2015) with respect to trust—misanthropy can be higher in dominating places. Yet, at the same time, rural America has clearly increasingly become subordinated, and this is perhaps another reason why misanthropy is growing there.[13]

Takeaway for Practice

TODO see other recent papers in cities for this section

We hope that this novel approach and analysis to the study of cities will spark more interest and perhaps start a new line of research into the dark side of urbanism. We aimed to be thought-provoking but also balanced.

The main takeaway is to recognize that population size beyond several hundred thousand is related to misanthropy (and unhappiness (Okulicz-Kozaryn 2016)). Smaller cities, say 2nd tier and lower, are better places to live, the results indicate.

We should start paying attention to the smaller areas that have been left behind as lamented by some (e.g., Fuller 2017, Hanson 2015) , but not heard by most. Redirecting resources away from smaler places should be given more thought. There appears to be pro-urban bias not only in the US Hanson (2015), but in general in world development (Lipton et al. 1977).

Misanthropy may not seem tangible or meaningful for practicioners. But misanhropy is related to other negative outcomes. Misanthropy reduces people's desire to invest and to be involved in their communities and may remove social bonds that deter people from harming others (Weaver 2006, Hirschi and Gottfredson 1993, Fafchamps and Minten 2006, Walters and DeLisi 2013). As a result, misanthropy is correlated with dysfunctional and animus behaviors such as homophobia, sexism, racism, and ageism (Cattacin et al. 20

.

It's impossible to overlook current covid19 pandemic–again, infectious disease spread is the worst in large cities Bettencourt et al. (2010) . Infectious disease will arguably further exascerbate misanthropy in largest cities–some people are likely to flee cities, to keep away from other people.

[10] One explanation is that people's trust is low in cities mostly because there are simply too many people, not necessarily because they dislike people.

[11] ~~As previously discussed, one problem with Wilson (1985) is that, unlike our study, he assumed that the urbanicity measures were continuous when in fact they are not, especially the xnorcsiz measure which is not continuous nor ordinal.~~

[11] And clearly this resentment could lead to increasing rural misanthropy, which we observe in this study. Although, the rural resentment may be more against cities or urbanites, rather than people in general. We thank an anonymous reviewer for these points.

[12] In some specific cases this is not true–there are always exceptions to any social scientific rule. For instance, after the urban white flight and before the recent urban ~~Renaissance~~renaissance, at least in some ways, suburbs were dominating (e.g., Adams 2014).

[13] We speculate that the main reason is that rural areas have been left behind (Hanson 2015, 2017, Fuller 2017)–being left behind is not necessarily the same as being subordinated.

This study is about the US only and the recults and take aways for practice may not generalize to other countries. We think, however, that they would generalize to other developed (and especially western) countries, similarly to SWB results (cite SWB cross natl research)–people are less happy in largest cities, and similarly they are likely to be more misanthropic. In developing countries, however, cities may not be more misanthropic for one simple reason–life is simply often unbreable outside of a city, missing necessities such as access to heathcare and basic consumer goods. Misanthropy is arguably less likely if cities if only cities provide necessities. This is, however, speculation and cross-country research is needed.

References

Adams, C. T. (2014): *From the outside in: Suburban elites, third-sector organizations, and the reshaping of Philadelphia*, Cornell University Press.

Alonso, W. (1960): "A theory of the urban land market," *Papers in Regional Science*, 6, 149–157.

——— (1971): "The economics of urban size," *Papers in Regional Science*, 26, 67–83.

Amin, A. (2006): "The good city," *Urban studies*, 43, 1009–1023.

Avramenko, R. (2004): "Zarathustra and his Asinine Friends: Nietzsche on Post-modern, Post-liberal Friendship," in *American Political Science Association. Chicago, Annual Meeting: np*, 1–30.

Berry, B. J. and A. Okulicz-Kozaryn (2011): "An Urban-Rural Happiness Gradient," *Urban Geography*, 32, 871–883.

Bettencourt, L. and G. West (2010): "A unified theory of urban living," *Nature*, 467, 912–913.

Bettencourt, L. M., J. Lobo, D. Helbing, C. Kühnert, and G. B. West (2007): "Growth, innovation, scaling, and the pace of life in cities," *Proceedings of the National Academy of Sciences*, 104, 7301–7306.

Bettencourt, L. M., J. Lobo, D. Strumsky, and G. B. West (2010): "Urban scaling and its deviations: Revealing the structure of wealth, innovation and crime across cities," *PloS one*, 5, e13541.

Bleidorn, W., F. Schönbrodt, J. E. Gebauer, P. J. Rentfrow, J. Potter, and S. D. Gosling (2016): "To Live Among Like-Minded Others: Exploring the Links Between Person-City Personality Fit and Self-Esteem." *Psychological Science*.

Boots, B. (1979): "Population density, crowding and human behaviour," *Progress in Geography*, 3, 13–63.

Calhoun, J. B. (1962): "Population density and social pathology." *Scientific American*.

Capello, R. and R. Camagni (2000): "Beyond optimal city size: an evaluation of alternative urban growth patterns," *Urban Studies*, 37, 1479–1496.

Cassel, J. (2017): "Health consequences of population density and crowding," in *People and buildings*, Routledge, 249–270.

Cattacin, S., B. C. Gerber, M. Sardi, and R. Wegener (2006): "Monitoring misanthropy and rightwing extremist attitudes in Switzerland. An explorative study," .

Choldin, H. M. (1978): "Urban density and pathology," *Annual Review of Sociology*, 4, 91–113.

Collette, J. and S. D. Webb (1976): "Urban density, household crowding and stress reactions," *The Australian and New Zealand Journal of Sociology*, 12, 184–191.

Cooper, D. E. (2018): *Animals and Misanthropy*, Routledge.

Davis, J. A., T. W. Smith, and P. V. Marsden (2007): *General Social Surveys, 1972-2006 [Cumulative File]*, Inter-university Consortium for Political and Social Research.

Davis, K. (1955): "The origin and growth of urbanization in the world," *American Journal of Sociology*, 429–437.

Delhey, J., K. Newton, and C. Welzel (2011): "How general is trust in "most people"? Solving the radius of trust problem," *American Sociological Review*, 76, 786–807.

Dewey, C. (2017): "A growing number of young Americans are leaving desk jobs to farm," *Washington Post*.

Elgin, D. (1975): *City size and the quality of life*, US Government Printing Office.

Fafchamps, M. and B. Minten (2006): "Crime, transitory poverty, and isolation: Evidence from Madagascar," *Economic Development and Cultural Change*, 54, 579–603.

Fischer, C. S. (1975): "Toward a subcultural theory of urbanism," *American Journal of Sociology*, 80, 1319–1341.

——— (1981): "The public and private worlds of city life," *American Sociological Review*, 306–316.

——— (1982): *To dwell among friends: Personal networks in town and city*, University of Chicago Press, Chicago IL.

——— (1995): "The subcultural theory of urbanism: A twentieth-year assessment," *American Journal of Sociology*, 543–577.

Fuller, T. (2017): "California's Far North Deplores Tyranny of the Urban Majority," *The New York Times*.

Glaeser, E. (2011): *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*, Penguin Press, New York NY.

Haidt, J. (2012): *The righteous mind: Why good people are divided by politics and religion*, Vintage.

Hanson, V. D. (2015): "The Oldest Divide. With roots dating back to our Founding, America's urban-rural split is wider than ever." *City Journal*, Autumn 2015.

——— (2017): "Trump and the American Divide. How a lifelong New Yorker became tribune of the rustics and deplorables." *City Journal*.

Herbst, C. and J. Lucio (2014): "Happy in the Hood? The Impact of Residential Segregation on Self-Reported Happiness," *IZA Discussion Paper*.

Hirschi, T. and M. Gottfredson (1993): "Commentary: Testing the general theory of crime," *Journal of research in crime and delinquency*, 30, 47–54.

Kleniewski, N. and A. Thomas (2010): *Cities, change, and conflict*, Nelson Education.

Kraus, M. W., P. K. Piff, and D. Keltner (2009): "Social class, sense of control, and social explanation." *Journal of personality and social psychology*, 97, 992.

Kunstler, J. H. (2012): *The geography of nowhere*, Simon and Schuster, New York NY.

Lederbogen, F., P. Kirsch, L. Haddad, F. Streit, H. Tost, P. Schuch, S. Wust, J. C. Pruessner, M. Rietschel, M. Deuschle, and A. Meyer-Lindenberg (2011): "City living and urban upbringing affect neural social stress processing in humans," *Nature*, 474.

Levy, L. and A. N. Herzog (1974): "Effects of population density and crowding on health and social adaptation in the Netherlands," *Journal of Health and Social Behavior*, 228–240.

Lipton, M. et al. (1977): *Why poor people stay poor: a study of urban bias in world development*, London: Canberra: Temple Smith; Australian National University Press.

Maryanski, A. and J. H. Turner (1992): *The social cage: Human nature and the evolution of society*, Stanford University Press.

McPherson, M., L. Smith-Lovin, and J. M. Cook (2001): "Birds of a feather: Homophily in social networks," *Annual Review of Sociology*, 415–444.

Melgar, N., M. Rossi, and T. W. Smith (2013): "Individual attitudes toward others, misanthropy analysis in a cross-country perspective," *American journal of economics and sociology*, 72, 222–241.

Meyer, W. B. (2013): *The Environmental Advantages of Cities: Countering Commonsense Antiurbanism*, MIT Press, Cambridge MA.

Milgram, S. (1970): "The experience of living in cities," *Science*, 167, 1461–1468.

Nettler, G. (1957): "A measure of alienation," *American Sociological Review*, 22, 670–677.

Nietzsche, F. W. and G. Parkes (2005): *Thus spoke Zarathustra: A book for everyone and nobody*, Oxford University Press, New York NY.

Okulicz-Kozaryn, A. (2015a): "Are we happier among our own race?" *Unpublished*.

——— (2015b): *Happiness and Place. Why Life is Better Outside of the City.*, Palgrave Macmillan, New York NY.

——— (2016): "Unhappy metropolis (when American city is too big)," *Cities*.

——— (2018): "No Urban Malaise for Millennials," *Regional Studies*.

Okulicz-Kozaryn, A., O. Holmes IV, and D. R. Avery (2014): "The Subjective Well-Being Political Paradox: Happy Welfare States and Unhappy Liberals." *Journal of Applied Psychology*, 99, 1300–1308.

Okulicz-Kozaryn, A. and J. M. Mazelis (2016): "Urbanism and Happiness: A Test of Wirth's Theory on Urban Life," *Urban Studies*.

Okulicz-Kozaryn, A. and R. R. Valente (2017): "The Unconscious Size Fetish: Glorification and Desire of the City," in *Psychoanalysis and the GlObal*, ed. by I. Kapoor, University of Nebraska Press.

O'Sullivan, A. (2009): *Urban economics*, McGraw-Hill.

Palisi, B. and F. Canning (1983): "Urbanism and Social Psychological Well-Being: A Cross-Cultural Test of Three Theories," *Sociological Quarterly*, 24, 527–543.

Park, R. E. (1915): "The city: Suggestions for the investigation of human behavior in the city environment," *The American Journal of Sociology*, 20, 577–612.

Park, R. E., E. W. Burgess, and R. D. Mac Kenzie ([1925] 1984): *The city*, University of Chicago Press, Chicago IL.

Peck, J. (2016): "Economic Rationality Meets Celebrity Urbanology: Exploring Edward Glaeser's City," *International Journal of Urban and Regional Research*, 40, 1–30.

Pile, S. (2005a): *Real cities: modernity, space and the phantasmagorias of city life*, Sage, Beverly Hills CA.

——— (2005b): "Spectral Cities: Where the Repressed Returns and Other Short Stories," in *Habitus: A sense of place*, ed. by J. Hillier and E. Rooksby, Ashgate Aldershot.

Pile, S., C. Brook, and G. Mooney (1999): "Unruly cities," *Order/disorder*.

Postmes, T. and N. R. Branscombe (2002): "Influence of long-term racial environmental composition on subjective well-being in African Americans." *Journal of personality and social psychology*, 83, 735.

Putnam, R. (2007): "E pluribus unum: Diversity and community in the twenty-first century," *Scandinavian Political Studies*, 30, 137–174.

Ramsden, E. (2009): "The urban animal: population density and social pathology in rodents and humans," *Bulletin of the World Health Organization*, 87, 82–82.

Ray, J. J. (1981): "Conservatism and misanthropy," *Political Psychology*, 3, 158–172.

Regoeczi, W. C. (2008): "Crowding in context: an examination of the differential responses of men and women to high-density living environments," *Journal of Health and Social Behavior*, 49, 254–268.

Richardson, H. W. (1972): "Optimality in city size, systems of cities and urban policy: a sceptic's view," *Urban Studies*, 9, 29–48.

Rodgers, W. L. (1982): "Density, crowding, and satisfaction with the residential environment," *Social Indicators Research*, 10, 75–102.

Rodríguez-Pose, A. and V. von Berlepsch (2019): "Does population diversity matter for economic development in the very long term? Historic migration, diversity and county wealth in the US," *European Journal of Population*, 35, 873–911.

Rosenberg, M. (1956): "Misanthropy and political ideology," *American Sociological Review*, 21, 690–695.

——— (1957): "Misanthropy and attitudes toward international affairs," *Journal of Conflict Resolution*, 340–345.

Rosenthal, S. S. and W. C. Strange (2002): "The urban rat race," *Syracuse University Working*.

Schilke, O., M. Reimann, and K. S. Cook (2015): "Power decreases trust in social exchange," *Proceedings of the National Academy of Sciences*, 112, 12950–12955.

Simmel, G. (1903): "The metropolis and mental life," *The Urban Sociology Reader*, 23–31.

Singell, L. D. (1974): "Optimum city size: Some thoughts on theory and policy," *Land Economics*, 207–212.

Smelser, N. J. and J. C. Alexander (1999): *Diversity and its discontents: cultural conflict and common ground in contemporary American society*, Princeton University Press, Princeton NJ.

Smith, J. A., M. McPherson, and L. Smith-Lovin (2014): "Social Distance in the United States Sex, Race, Religion, Age, and Education Homophily among Confidants, 1985 to 2004," *American Sociological Review*, 79, 432–456.

Smith, T. W. (1997): "Factors relating to misanthropy in contemporary American society," *Social Science Research*, 26, 170–196.

Thrift, N. (2005): "But malice aforethought: cities and the natural history of hatred," *Transactions of the institute of British Geographers*, 30, 133–150.

Tönnies, F. ([1887] 2002): *Community and society*, DoverPublications.com, Mineola NY.

Veenhoven, R. (1994): "How Satisfying is Rural Life?: Fact and Value," in *Changing Values and Attitudes in Family Households with Rural Peer Groups, Social Networks, and Action Spaces: Implications of Institutional Transition in East and West for Value Formation and Transmission*, ed. by J. Cecora, Society for Agricultural Policy Research and Rural Sociology (FAA).

Vogt Yuan, A. S. (2007): "Racial composition of neighborhood and emotional well-being," *Sociological Spectrum*, 28, 105–129.

Walters, G. D. and M. DeLisi (2013): "Antisocial cognition and crime continuity: Cognitive mediation of the past crime-future crime relationship," *Journal of Criminal Justice*, 41, 135–140.

Weaver, C. N. (2006): "Trust in people among Hispanic Americans," *Journal of Applied Social Psychology*, 36, 1160–1172.

Webb, S. D. (1975): "The meaning, measurement and interchangeability of density and crowding indices," *The Australian and New Zealand Journal of Sociology*, 11, 60–62.

Welch, M., D. Sikkink, and M. Loveland (2007): "The radius of trust: Religion, social embeddedness and trust in strangers," *Social Forces*, 86, 23–46.

White, M. G. and L. White (1977): *The intellectual versus the city: from Thomas Jefferson to Frank Lloyd Wright*, Oxford University Press, Oxford UK.

Wilson, T. C. (1985): "Urbanism, misanthropy and subcultural processes." *The Social Science Journal*.

Wirth, L. (1938): "Urbanism as a Way of Life," *American Journal of Sociology*, 44, 1–24.

Wuensch, K. L., K. W. Jenkins, and G. M. Poteat (2002): "Misanthropy, idealism and attitudes towards animals," *Anthrozoös*, 15, 139–149.

1 SOM-R (Supplementary Online Material-for Review)

Below we show basic descriptive statistics and then additional regression results.

Table 4: Variable definitions.

name	description
misanthropy	(misanthropy scale)
trust	"Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?"
people fair or try to take advantage	"Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?"
people are helpful	"Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves? (HELPFUL)"
srcbelt	SRC BELTCODE (see appendix for details)
xnorcsiz	EXPANDED N.O.R.C. SIZE CODE (see appendix for details)
size of place in 1000s	SIZE "Size of Place in thousands-A 4-digit number which provides actual size of place of interview."
family income in $1986, millions	Income variables (INCOME72 , INCOME , INCOME77 , INCOME82 , INCOME86 , INCOME91 , INCOME98 , INCOME06) are recoded in six-digit numbers and converted to 1986 dollars. The collapsed numbers above are for convenience of display only. Since this variable is based on categorical data, income is not continuous, but based on categorical mid-points and imputations. For details see GSS Methodological Report No. 64.
protestant	"What is your religious preference? Is it Protestant, Catholic, Jewish, some other religion, or no religion?"
catholic	"What is your religious preference? Is it Protestant, Catholic, Jewish, some other religion, or no religion?"
conservative	"We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people might hold are arranged from extremely liberal–point 1–to extremely conservative– point 7. Where would you place yourself on this scale?" "SLGHTLY CONSERVATIVE" or "CONSERVATIVE" or "EXTRMLY CONSERVATIVE"
liberal	"We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people might hold are arranged from extremely liberal–point 1–to extremely conservative– point 7. Where would you place yourself on this scale?" "SLGHTLY LIBERAL" or "LIBERAL" or "EXTRMLY LIBERAL"
marital status	"What is your religious preference? Is it Protestant, Catholic, Jewish, some other religion, or no religion?"
unemployed	"Last week were you working full time, part time, going to school, keeping house, or what?" "Unemployed, laid off, looking for work"
age	age of respondent
highest year of school completed	HIGHEST YEAR OF SCHOOL COMPLETED A. "What is the highest grade in elementary school or high school that (you/your father/ your mother/your [husband/wife]) finished and got credit for? " CODE EXACT GRADE.; B. IF FINISHED 9th-12th GRADE OR DK*: "Did (you/he/she) ever get a high school diploma or a GED certificate?" [SEE D BELOW.]; C. "Did (you/he/she) complete one or more years of college for credit–not including schooling such as business college, technical or vocational school?" IF YES: "How many years did (you/he/she) complete?"
male	male
born in the U.S.	"Were you born in this country?"
white household	"Race of household"
afraid to walk at night in neighborhood	"Is there any area right around here–that is, within a mile–where you would be afraid to walk alone at night?"
SWB	GENERAL HAPPINESS "Taken all together, how would you say things are these days–would you say that you are very happy, pretty happy, or not too happy?"
health	CONDITION OF HEALTH "Would you say your own health, in general, is excellent, good, fair, or poor?"
subjective class identification	"If you were asked to use one of four names for your social class, which would you say you belong in: the lower class, the working class, the middle class, or the upper class? "

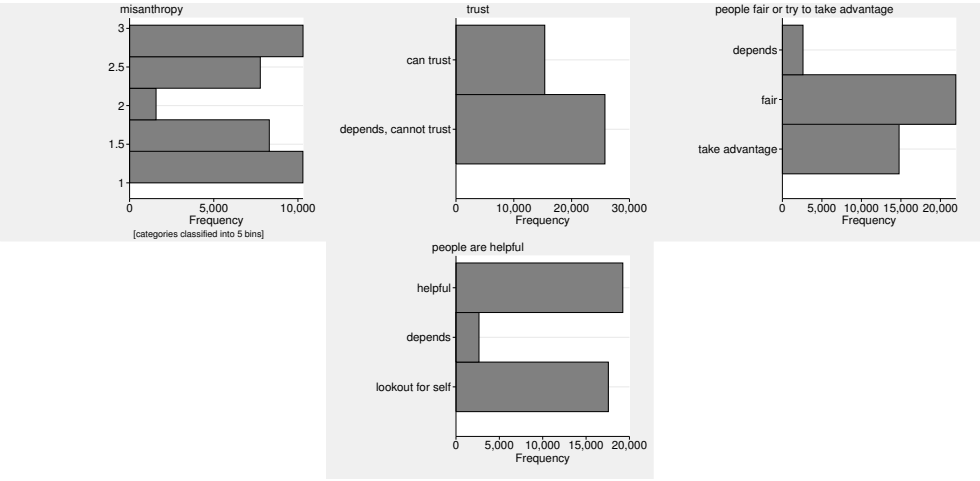

Figure 3: Variables' distribution.

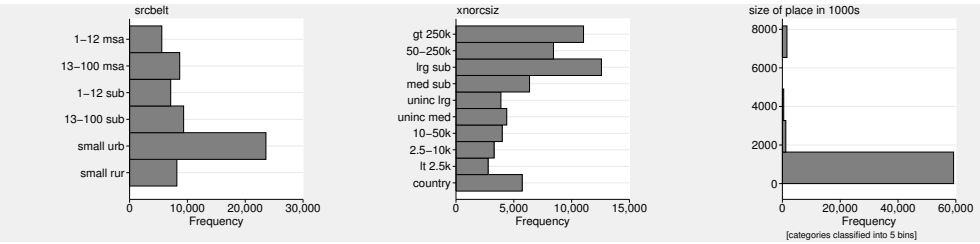

Figure 4: Variables' distribution.

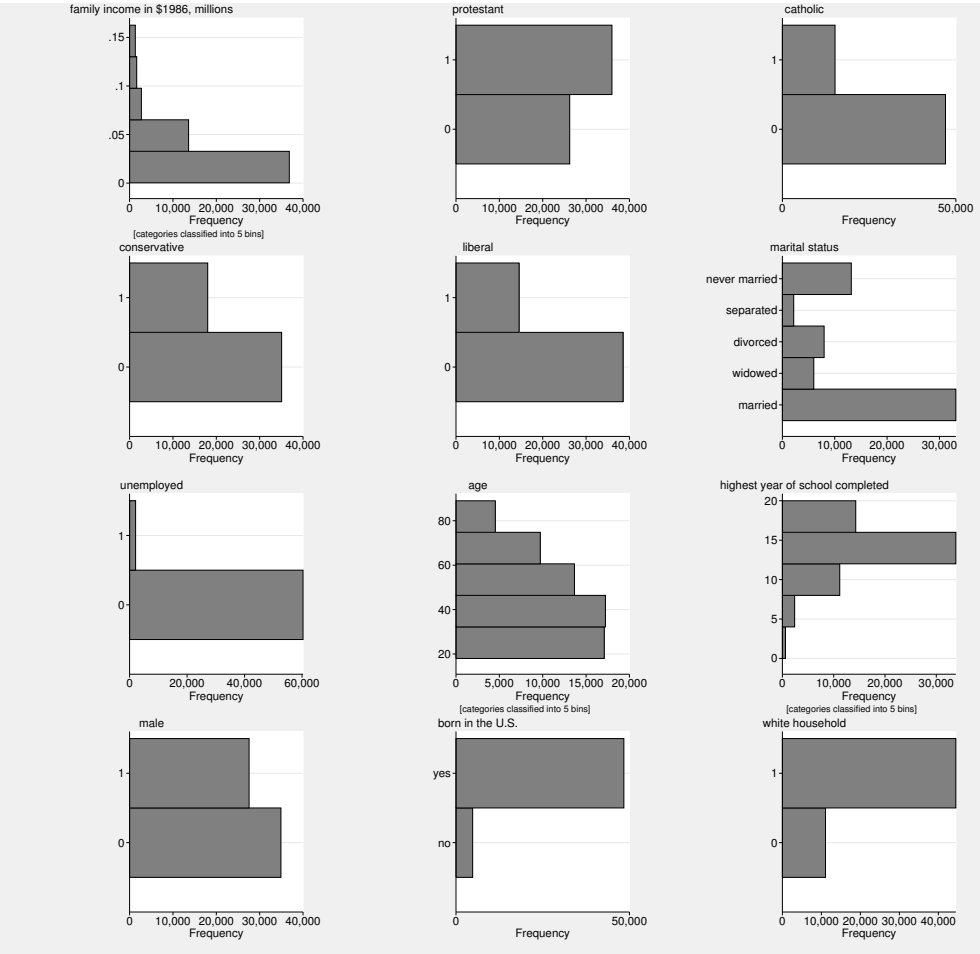

Figure 5: Variables' distribution.

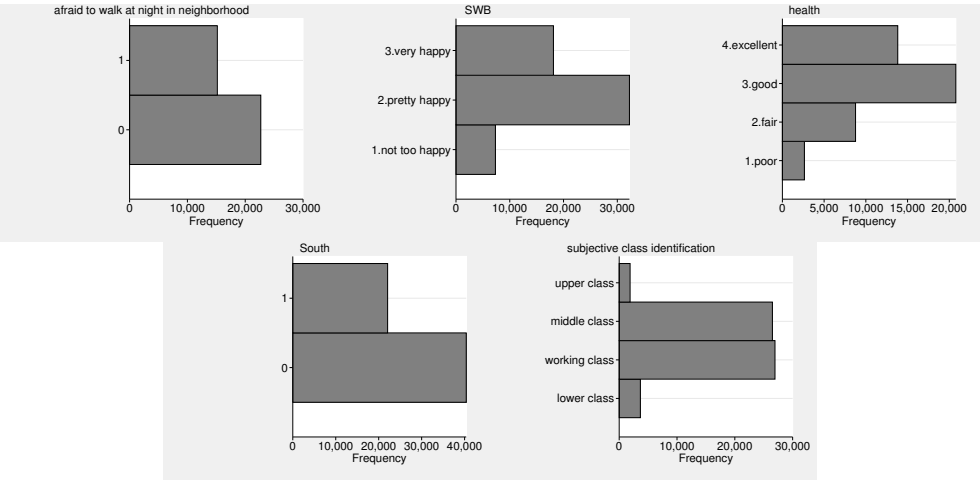

Figure 6: Variables' distribution.

In the body of the paper we have plotted results from simple specification a3a from table 5, but note that more elaborate specifications with more variables and dummied out time are similar.

Table 5: OLS regressions of misanthropy. Beta (fully standardized) coefficients reported. All models include year dummies.

	a4c2	a3a	b4c2	c4c2
-2k	0.00			
2-4k	10.92**			
4-8k	1.52			
8-14k	8.44*			
14-24k	12.92***			
24-41k	5.52			
41-79k	14.73***			
79-192k	4.02			
192-618k	15.40***			
618k-	13.37***			
year	0.01***	0.01***	0.01***	0.01***
-2k × year	0.00			
2-4k × year	-0.01**			
4-8k × year	-0.00			
8-14k × year	-0.00*			
14-24k × year	-0.01***			
24-41k × year	-0.00			
41-79k × year	-0.01***			
79-192k × year	-0.00			
192-618k × year	-0.01***			
618k- × year	-0.01***			
subjective class identification	-0.10***	-0.11***	-0.10***	-0.10***
family income in $1986, millions	-1.12***	-1.73***	-1.12***	-1.18***
protestant	0.01	-0.01	0.01	0.01
catholic	-0.03	-0.03***	-0.03*	-0.03*
unemployed	0.01	0.04*	0.01	0.01
age	-0.02***	-0.01***	-0.02***	-0.02***
age squared	0.00***	0.00***	0.00***	0.00***
highest year of school completed	-0.05***	-0.06***	-0.05***	-0.05***
male	0.07***	0.05***	0.07***	0.07***
married	0.00	0.00	0.00	0.00
widowed	-0.01	0.06***	-0.01	-0.02
divorced	0.04*	0.09***	0.03*	0.03*
separated	0.10***	0.17***	0.10***	0.10***
never married	-0.03*	0.02**	-0.03*	-0.04**
afraid to walk at night in neighborhood	0.15***		0.15***	0.14***
conservative	0.01		0.01	0.01
liberal	-0.03**		-0.03**	-0.04**
born in the U.S.	-0.05**		-0.05**	-0.04*
SWB	-0.17***		-0.17***	-0.17***
South	0.14***	0.15***	0.14***	0.14***
small		0.00		
med		4.56***		
big		9.42***		
small × year		0.00		
med × year		-0.00***		
big × year		-0.00***		
country			0.00	
lt 2.5k			-5.13	
2.5-10k			-3.52	
10-50k			3.05	
uninc med			0.76	
uninc lrg			11.72**	
med sub			10.94**	
lrg sub			10.78***	
50-250k			7.95*	
gt 250k			13.20***	
country × year			0.00	
lt 2.5k × year			0.00	
2.5-10k × year			0.00	
10-50k × year			-0.00	
uninc med × year			-0.00	
uninc lrg × year			-0.01**	
med sub × year			-0.01**	
lrg sub × year			-0.01***	
50-250k × year			-0.00*	
gt 250k × year			-0.01***	
small rur				0.00
small urb				14.15***
13-100 sub				15.26***
1-12 sub				16.36***
13-100 msa				19.40***
1-12 msa				20.60***
small rur × year				0.00
small urb × year				-0.01***
13-100 sub × year				-0.01***
1-12 sub × year				-0.01***
13-100 msa × year				-0.01***
1-12 msa × year				-0.01***
N	14034	33545	14034	14034

*** p<0.01, ** p<0.05, * p<0.1; robust std err

From table 6 we see that while whites are in general less misanthropic than minorities, they are more misanthropic in larger places, thus confirming Wilson (1985). Note, the column names correspond with earlier tables. In a4c1 we interact urbanicity with white hh dummy–indeed we find confirmation for Wilson (1985)–clearly whites experience more misanthropy in urban areas. Wilson (1985) explains this pattern using Fischer's subcultural theory.

Table 6: OLS regressions of misanthropy. All models include year dummies. Size deciles (base: <2k). Srcbelt (base: small rur). Xnorcsiz (base: <2.5k, but not country).

	a4c1	b4c1	c4c1
-2k	0.00		
2-4k	-0.12		
4-8k	-0.14**		
8-14k	-0.13**		
14-24k	-0.20***		
24-41k	-0.10		
41-79k	-0.11*		
79-192k	-0.18***		
192-618k	-0.14***		
618k-	-0.11*		
white household	-0.40***	-0.23***	-0.34***
-2k × white household	0.00		
2-4k × white household	0.17**		
4-8k × white household	0.19***		
8-14k × white household	0.21***		
14-24k × white household	0.26***		
24-41k × white household	0.16**		
41-79k × white household	0.13*		
79-192k × white household	0.19***		
192-618k × white household	0.17***		
618k- × white household	0.18***		
subjective class identification	-0.10***	-0.10***	-0.10***
family income in $1986, millions	-0.97***	-1.01***	-1.04***
protestant	-0.02	-0.02	-0.01
catholic	-0.03	-0.03	-0.03
unemployed	0.01	0.01	0.01
age	-0.02***	-0.02***	-0.02***
age squared	0.00***	0.00***	0.00***
highest year of school completed	-0.05***	-0.05***	-0.05***
male	0.07***	0.07***	0.07***
married	0.00	0.00	0.00
widowed	-0.02	-0.02	-0.02
divorced	0.04*	0.04*	0.04*
separated	0.07**	0.07**	0.07*
never married	-0.06***	-0.05***	-0.06***
afraid to walk at night in neighborhood	0.14***	0.15***	0.14***
conservative	0.02	0.02	0.02
liberal	-0.04***	-0.04***	-0.04***
born in the U.S.	-0.01	-0.00	0.00
SWB	-0.16***	-0.16***	-0.16***
South	0.12***	0.12***	0.12***
country		0.00	
lt 2.5k		0.08	
2.5-10k		-0.01	
10-50k		-0.03	
uninc med		-0.10	
uninc lrg		-0.09	
med sub		-0.10	
lrg sub		-0.01	
50-250k		-0.07	
gt 250k		-0.04	
country × white household		0.00	
lt 2.5k × white household		-0.21**	
2.5-10k × white household		-0.06	
10-50k × white household		-0.02	
uninc med × white household		0.06	
uninc lrg × white household		0.04	
med sub × white household		0.09	
lrg sub × white household		-0.01	
50-250k × white household		-0.03	
gt 250k × white household		0.00	
small rur			0.00
small urb			-0.08*
13-100 sub			-0.09
1-12 sub			-0.04
13-100 msa			-0.12**
1-12 msa			-0.03
small rur × white household			0.00
small urb × white household			0.12**
13-100 sub × white household			0.14**
1-12 sub × white household			0.13**
13-100 msa × white household			0.14**
1-12 msa × white household			0.12*
N	13799	13799	13799
*** p<0.01, ** p<0.05, * p<0.1; robust std err			

2 Density, crowding and negative consequences: stress, depression, and aggresion

A significant problem in cities is crowding which forces a large number of people to live in close proximity (household crowding) and

in a small amount of space (residential crowding). Experiments with rats have shown that when crowded, rats become more stressed, aggressive, and end up killing each other (Calhoun 1962), which is often what happens when you cram animals together in confined spaces. Similar to other species, humans are also harming and killing each other at an increased rate in places with a high population density—crime increases with population size (Bettencourt and West 2010), and crowding is associated with higher levels of stress, depression, and aggression (Regoeczi 2008).

We realize that this comparison may seem striking at first to some. These experiments are a classic, cited over 1,000 times, including in social science and urban studies specifically https://scholar.google.com/scholar?hl=en&as_sdt=5%2C31&sciodt=0%2C31&cites=14744725811213082 9&scipsc=1&q=cities&btnG= and elucidate the biological mechanism between population density and social pathology. There are striking examples of crowding in largest cities. New York offers some 250 sq feet apartments–given that a couple lives there with one child–it is less than 100 sq feet per person. Even more stunningly, some New Yorkers already live in 100 sq feet apartments. See http://7online.com/realestate/couple-squeezes-into-one-of-manhattans-tiniest-apartments/371661/,http://inhabitat.com/nyc/womans-impossibly-tiny-90-sq-ft-manhattan-apartment-is-one-of-the-smallest-in-90-square-foot-apartment/,http://www.nydailynews.com/new-york/uptown/smallest-apartment-nyc-article-1.1459066. Some apartments or "cubbyholes" are even smaller at striking 40 square feet, see for instance: http://www.nytimes.com/2016/09/18/realestate/so-you-think-your-place-is-small.html. In other dense cities crowding is similar, e.g.,https://www.nytimes.com/interactive/2019/07/22/world/asia/hong-kong-housing-inequality.html. To be sure, majority of urban population does not live in such extreme crowding, the trend however is in that direction as cities are becoming larger and less affordable. And, again, even eithout extreme crowding, usual population density is related to crime (Bettencourt and West 2010). There is also evidence that density relates to negative consequences: interestingly there is evidence that density impacts pathology more than crowding (Levy and Herzog 1974). Yet, it is not only density and crowding, other factors such as social support matter as well (Cassel 2017). Some studies didn't find negative effects of density or crowding and results were mixed (Collette and Webb 1976). While it seems to be reasonable to assume that density and crowding are positivelty related, some studies do not find this to be the case (Webb 1975, Rodgers 1982). For a nice discussion and overview of density, crowding and human behavior see Boots (1979), Choldin (1978).

For some more recent discussion see Ramsden (2009).

Although it seems evident that crowding can be harmful to almost all animals and species, this is often overlooked with respect to humans, particularly in the urban studies literature where some argue that the more people, the better (e.g., Glaeser 2011). While high density is not the same as crowding, the two concepts are correlated. And indeed in densest cities, what many overlook, crowding is arguably common.