Author's response

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Title: When Place is Too Big: Happy Town and Unhappy Metropolis Cities

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Contents

1 Response to Editor

Dear Professor Modarres,

Thank you for the opportunity to submit a revised draft. I list below in inline format my brief responses to reviewers' comments and attach at the end tracked changes that show precisely the additions and deletions.

2 Response to Reviewer #1

I was looking forward to reading this paper. The abstract was promising. Unfortunately I have been very disappointed in the result. The paper ends up addressing a question which is no longer new and as such adds nothing to a literature which has now moved on to understanding why the very largest cities in particular are returning lower average levels of wellbeing that their smaller counterparts.

Yes, we already knew that people are less happy in large cities, but we did not know at what point the unhappiness settles in. This study, as indicated in abstract, tries to find out when a big place is too big. In addition, it improves over extant literature by using multiple measures of size and elaborated set of controls. And it contributes by finding errors, or at least "inconsistencies" in Glaeser (2011). Recent literature repeats Glaeser (2011) without identifying or discussing the problems in reasoning–for instance see recent Ballas (2013) in this journal. To be fair, after citing Glaeser, Ballas (2013) says "There is a need for such arguments and evidence to be considered more closely." This is precisely what this study does. Finally, there is a new finding added now that largest cities are not only least happy, but also most unequal in happiness.

The author appears unaware of much of the contemporary literature in this rapidly expanding topic. The field is now highly international as well as interdisciplinary and a paper devoted to the USA needs to acknowledge the conceptual issues raised by studies in other countries if not the empirical estimates from different urban systems.

This study is interdisciplinary (now i highlight this feature explicitly): it draws on sociology, psychology, economics, and geography. Perhaps, especially psychological and sociological research is most useful–audience of this journal may be unfamiliar with it. Added:

> Likewise, there is recently emerging a consensus that social scientists should take an interdisciplinary perspective on happiness (Ashkanasy, 2011, Blanchflower and Oswald, 2011, Judge and Kammeyer-Mueller, 2011, Ballas, 2013, Schwanen and Atkinson, 2015). This study draws on sociology, psychology, economics, and geography.

Pretty much any field is highly international and many are rapidly expanding. I admit that it is impossible to keep up with all the research in many areas these days–it simply takes more than 24 hours per day to read all relevant research. Publication volume doubles every 15 years or so (Larsen and von Ins, 2010).

However, this is rather for reasons of specificity and parsimony than ignorance (I hope!) that I try to keep this research focused on the US and do not get into international considerations. As a sidenote, I am working on a book about happiness and cities, and I cite there about 250 studies–if I specialize in any area, it is happiness and cities. I have added some more literature to this study to make it more interdisciplinary and in-depth.

I do acknowledge the fact that results are for the US and that elsewhere results differ:

> Indeed, people are happier in cities in developing countries as shown by Berry and Okulicz-Kozaryn (2009), but in the rich countries, it is the other way round–the bigger the area, the more dissatisfaction. The fact that people are happy in cities in poor countries is arguably not due to cities' "greatness." It may be simply that life outside of the city in a poor country is unbearable and lacking the necessities, such as food, shelter, sanitation, and transportation. There is usually an enormous gap in broadly understood quality of life or so called "livability" between urban and rural areas in developing countries. For instance, urbanites enjoyed three times higher income and consumption than rural dwellers in China in 2000 (Knight et al., 2006). Simply speaking, the urban happiness in developing countries is rather due to unfavorable conditions outside of cities, not due to virtues of cities. As discussed later, cities have very few virtues, but many vices.

In an effort to enrich this study, I have made some additions. At the same time, to streamline it, I have dropped some text that was not central to the argument. See tracked changes at the end.

Finally now i refer to the recent literature review on cities and happiness to emphasize my contribution:

> Likewise, a recent review of happiness and cities literature (Ballas, 2013) does not provide the answer.

The paper is also far too casual

Indeed, after rereading it, it does sound quite casual. The problem is that I often try to keep my prose plain and lively as advised by scientific writing experts (Zinsser, 2006, McCloskey, 1985). And I do realize that such writing is still not mainstream in social science. Hence, I now made efforts to make writing more official, and "academic," hope not too formal and dry.

and sometimes disrespectful in its treatment of other (often very senior) authors.

I have dropped a paragraph where I have mentioned Angus Deaton–that part was also quite irrelevant to the main message of this study. I do keep Edward Glaeser, however. In no way I meant to be disrespectful. On the contrary, I strive to be neutral and objective. I have reread my statements carefully again to make sure. My intent is simply to report that he is wrong in my opinion.

The methodology is routine and is not adapted to the specific research issues at hand.

Yes, methodology is routine, but there is nothing wrong with that, unless it is "not adapted to the specific research issues at hand." I do not see, however, the lack of adaptation. This statement is to vague for me to address specifically. Let me guess. I imagine that what reviewer means is endogeneity.
True, one can never be sure about causality except in an experiment. Experimental assignment to a city, however, is very rare, nonrepresentative, and observed for very few people. Some natural experiments may be possible, but I did not find any such data. This study remains nonexperimental or observational. Yet, as persuasively pointed out by labor economist Andrew Oswald (e.g., Blanchflower and Oswald, 2011, Oswald, 2014), nonexperimental studies are not without merit, despite what some scientists recently argue. Many scientific breakthroughs were first established in observational studies, for instance, the relationship of smoking to cancer. It is often overlooked that experiments suffer from many critical problems that are not inherent in observational studies such as lack of external validity, small sample size, artificial laboratory setting, and forced imaginary roles, such as a person pretending to be a company or imagining winning a lottery. For discussion see Pawson and Tilley (1997).

In summary the paper is rudimentary, out of date, poorly written and methodologically deficient should not to be included in a journal of the calibre of CITIES.

I do not see how paper is rudimentary. As argued above, this study has new findings and contributes to literature. I tried to improve writing. Yes, an experiment would have better internal validity, but poorer external validity and I am now aware of publicly available good experimental data, and as discussed above there is still value in non-experimental studies despite recent experimental fashion. If reviewer means using panel data in her critique of methodology: We do not have long running panels for the US: PSID and GSS have only 3 waves, and I do not want to study Europe as others do with GSOEP or BHPS.

3 Response to Reviewer #2

In general. Interesting but perhaps too long for 'Cities'. it should be more concise and needs a better structure with a clear distinction between research findings and conclusions. Now there is only a long 'Introduction' (?) followed by 'Data' and 'Results and Discussion' (and too much isolated information in the Appendices). Perhaps it is an option to formulate some 'logical' or 'popular' arguments and accept or reject them explicitly on the basis of analysis or personal decisions. Examples:

> I made it shorter in many places, and elaborated bit more in others–see tracked changes at the end of this file. I added 2 new sections: "Happy or Unhappy Cities?" at the beginning and "Conclusion" at the end.

1. Cities have some economic profile; there may be a harbour, a university, government agencies, cultural activities and so on. This profile goes together with specific employment, a specific labour market, and a demographic composition of the population, in terms of age, education, marital status, ethnicity and income. This may have consequences for average happiness and this can explain the lower average happiness in big cities. The author applies some controls, like age and political orientation, to reject this argument. It is unlikely however that there are no consequences at all. The author should be more precise and explicit!

> Fantastic! I agree. Now i add controls for occupation, and discuss it briefly following your advice.
> Added:
>
> > Cities have economic profiles that determine labor market and demographic characteristics of the population, which may impact happiness.[1] In an effort to account for this, column "a4" adds dummies for major occupation categories (International Standard Classification codes): professional, administrative/managerial, clerical, sales, service, agriculture, production and transport, craft and technical. Results persist. Still future research may improve by using geocoded data and controlling for actual economic profile of each place.

He or she may also pay attention to the inequality of happiness between individuals and different groups (standard-deviations?).

> This is good idea.
> Added:
>
> > This study has focused on the level of happiness by size of a place. But it is worth mentioning that happiness dispersion (standard deviation) also varies slightly by size of a place. Not only largest cities are least happy, but they are also most unequal in happiness. For details see appendix B.

The author might also mention the danger that immigrants and homeless people are underrepresented in the survey-samples; this might support his argument.

> Brilliant! Thank you very much for this suggestion. It is now included in paper and it greatly helps with the argument.
> Added:
>
> > Last but not least, some of the arguably most unhappy urban dwellers are unaccounted for, that is, cities are in fact even less happy than argued here. These dwellers include homeless people, addicts, criminals, prostitutes, and so forth.[2]

2. The author believes that capitalism and overconsumption are causes of unhappiness in big cities. This argument is 'unfinished' because there is no reason to expect that the impact of capitalism and overconsumption will be different in bigger cities. (or?)

[1] I am grateful to an anonymous reviewer for this point.
[2] I am grateful to an anonymous reviewer for this point.

Actually, I do believe in that. It is not the only cause, to be sure, there are other causes as elaborated by Tönnies ([1887] 2002), Simmel (1903), Wirth (1938) and others.
Now, I do not want to develop this argument here because it would make the paper much much longer, and I am making an attempt to develop it better elsewhere. To clarify, I added:

> Testing and in-depth discussion of the underlying causal mechanism is beyond the scope of this observational and exploratory study; for discussion see <blind for peer review>.

3. It is probably true that relations in bigger cities are more instrumental and superficial; there is probably more 'Gesellschaft' and less 'Gemeinschaft' in bigger cities. This argument is acceptable but needs some practical evidence. Is there more individualization and less social support and general trust in bigger cities? The article would be more convincing if this is the case, and if this explanation is still needed after controlling for the effects of the demographic composition (see 1).

yes, there is less general trust in cities.

d_size	mean	sd
1 (0-2k)	0.402	0.490
2 (3-4k)	0.375	0.484
3 (5-8k)	0.382	0.486
4 (9-14k)	0.386	0.487
5 (15-23k)	0.399	0.490
6 (24-40k)	0.404	0.491
7 (41-78k)	0.397	0.489
8 (79-188k)	0.389	0.488
9 (190-622k)	0.348	0.476
10 (623-8008)k	0.325	0.468

And I briefly mention it in paper now:

> Urbanites are less trusting than others. In largest cities about 32% of respondents think that most people can be trusted, while in areas smaller than 190 thousand 39% of people are trusting.

Some minor points:

1. If the availability of nature in cities is an additional argument then the author should try to look at the correlation between nature and happiness. On page 5 the author writes that this point is not tested in the present study, but no reason is given.

Added:

> This hypothesis is not directly tested, however. There is simply no variable to measure nature in the dataset used here. An indirect test is conducted using city variables–it is assumed that the larger the place, the less nature. Of course, in such case lack of nature confounds with other city attributes, but still based on the above review, it is reasonable to argue that lack of nature contributes to city unhappiness. For more discussion of nature and happiness see (Okulicz-Kozaryn, 2015).

2. It is plausible that the negative side of cities leads to lower happiness (page 6, references to Wirth and Fischer) but this key-point deserves a bit more text.

Elaborated:

> Cities exemplify mechanical society without much community (Tönnies, [1887] 2002), they overstimulate (Simmel, 1903) and are unhealthy to human brain (Lederbogen et al., 2011). City intensifies vice, crime, and conspicuous consumption; labor specialization and industrialization that accompany urbanization kill spontaneity and joy (Park, 1915, Park et al., [1925] 1984, Veblen, 2005a,b, Wirth, 1938). City is full of pollution, dirt, noise, crowding, poverty, beggary, monotony of the buildings (senseless chunks) (Wirth, 1938, White and White, 1977). In short, we know that cities are in many ways incompatible with human flourishing and wellbeing.

3. At the beginning of page 7: in the definition of Veenhoven, it must be "overall judgment of life as a wholeetc."

No, just checked again with `http://www2.eur.nl/fsw/research/veenhoven/Pub2000s/2008c-full.pdf` and there is no "as a whole."

4. At the end of page 7: it is fine to be critical, but it is not so nice to be very critical about one individual in particular!

This is a good point. Because me being critical of people critical of happiness research including Angus Deaton is not central to the argument of this article, I dropped that whole paragraph. Another reason to do so is that I was asked to shorten and streamline this article.

5. The section 'Results and Discussion' is too much about details and not enough about main points. It gets better where it is about 'the message'! (=conclusion??)

To compromise, I left the details–I have an impression that there is a significant portion of readers that may find it useful–and I followed your advice and designated text starting with 'the message' as Conclusion section.

6. In my view it is nicer to keep the dependent variable happiness on the y-axis (vertical!) (page 11, 12). Inequality can also be used as a relevant dependent variable.

Yes, usually dependent variable should be on y-axis. Here I did the opposite for readability reasons–size definitions are quite lengthy and easier to read horizontally. Again, thank you for suggestion about inequality–i will work on inequality in happiness by urbanicity in the future. This is interesting line of inquiry for me. Again, I now provide quick descriptive statistics about inequality by urbanicity in this paper as indicated above.

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4 Text Changes

(see next page)

When Place is Too Big: Happy Town and Unhappy Metropolis

Draft: Thursday 17th September, 2015

Abstract

Most scholars in urban studies ~~, public policy and public~~ and public policy/administration support city living, that is, they (usually implicitly) suggest that people are happy in cities or at least they focus on how to make people happy in cities. Planners also largely focus on making cities happy places, e.g., so called Smart Growth. Economists emphasize agglomeration economies and associated improved productivity in cities. In short, low density living is not a popular idea among ~~scholars~~social scientists, although it used to be several decades ago. This study uses General Social Survey to calculate subjective ~~well-being (happiness) by size (population)~~ wellbeing or happiness by size of a place to find out when a place is too big. The general answer is somewhere between 200 and 700 thousand of people. When population exceeds several hundred thousand, the unhappiness settles in. Results are robust to the operationalization of an urban area, and to the elaboration of the model with multiple controls known to predict ~~life satisfaction.~~ happiness. Interestingly, largest cities are not only least happy, but also most unequal in happiness. This study concerns only the US, and results should not be generalized to other countries. Directions for future research are discussed.

KEYWORDS: URBANISM, URBAN, RURAL, CITES, SUBURBS, SIZE OF A PLACE, POPULATION DENSITY, HAPPINESS, SUBJECTIVE WELLBEING, GENERAL SOCIAL SURVEY

Urban scholars, regional scientists, and planners study Quality Of Life (QOL), which is usually defined in a narrow sense as quality of transportation~~or housing~~, housing, or some other domain. Psychologists, on the other hand, study Subjective ~~Well-Being~~ Wellbeing (SWB),[1] which is usually measured with surveys asking respondents about their happiness. SWB is subjective, self-reported, cognitive, and affective evaluation of one's life. SWB ~~has been shown to be a reliable and valid measure, and hence,~~ can be used to evaluate and direct

[1] SWB is, roughly speaking, synonymous with happiness, and I will use them interchangeably. Happiness measurement is discussed later. The overall consensus is that happiness measure is reliable and valid; and happiness research is becoming mainstream in social science.

policy and planning. Ultimately, public policy efforts are made to make people happy. [2] This idea, to make people happy through policies and planning, is not only author's or Jeremy Bentham's idea,[2] but it is also advocated by contemporary leaders in social science such as Amartya Sen (Stiglitz et al. 2009). This study ~~discusses~~ investigates the link between ~~place and happiness: Which places are happy? Specifically,~~ size of a place ~~is investigated: How large is the population of a place where people are the happiest?~~ and happiness.

This study is inspired by Claude S Fischer, an urban sociologist, who asked in 1973, "Does the likelihood of an individual expressing malaise increase with an increase in the urbanism of his place of residence (indexed by size of community)?" For 40 years nobody has answered this question, that is, no study has investigated the effect of "size of community" (number of people) on happiness. Already Fischer himself (1973, 1982) found that there is no significant difference, except that the biggest cities may be too big~~, but the~~ . The datasets available at that time were smaller and did not allow to measure community size precisely, but at more aggregated level using imprecise approximation to categories such as largest cities, medium sized towns, and so forth. Similarly, Veenhoven (1994) using limited data did not find much difference in happiness between places of different size. There have been other indirect investigations for specific groups of people or geographic areas (Amato and Zuo 1992, Adams 1992, Adams and Serpe 2000, Balducci and Checchi 2009, Evans 2009). By indirect investigations I mean that no study has operationalized urbanism with population size as in Fischer's question. Likewise, a recent review of happiness and cities literature (Ballas 2013) does not provide the answer. I have also recently started giving indirect answers to

[2]~~SWB is, roughly speaking, synonymous with happiness, and I will use them interchangeably. There is some criticism of happiness measurement and research as discussed later, but the overall consensus is that happiness measure is reliable and valid; and happiness research is becoming mainstream in social science.~~

[2]Jeremy Bentham (1748-1832), a British philosopher, is a founder of moral utilitarianism–an idea that what makes us happy is the right thing to do. It follows, according to this doctrine, that the role of the public policy should be to maximize the happiness, that is, governments should produce the greatest happiness for the greatest number.

Fischer's question <blind for peer review>, but this study is more comprehensive and ~~it~~ uses a continuous measure of size of the community–and this is precisely what Fischer (1973) was asking future research to accomplish. Results of the present study suggest that the bigger the place the more unhappiness, and people are least happy in cities bigger than somewhere between 200 and 700 thousand people. It may appear as a very imprecise answer. This is an approximate range that is estimated from regressions, and ~~there is no attempt made~~ I do not attempt to narrow it ~~down the~~ down. The goal of this study is to maximize generality at the cost of specificity~~. This study is~~ , to provide a statement about US cities in general~~, and~~ . American cities are, of course, very different in about everything, including size at which unhappiness develops~~. For future research, it would be interesting to focus on a set of specific cities, or on a specific region or state that could be achieved using restricted use/geocoded version of General Social Survey or Behavioral Risk Factor Surveillance System.~~ : 200-700 thousand.

~~Social scientists have recently recognized that there~~ There is a need to study happiness simply because it is happiness and not income or consumption that is the ultimate goal of broadly understood development ~~. At the same time~~(e.g., Stiglitz et al. 2009, Diener 2012, Easterlin 2013). Likewise, there is ~~a~~ recently emerging a consensus that social scientists should take an interdisciplinary perspective on happiness (Ashkanasy 2011, Blanchflower and Oswald 2011, Judge and Kammeyer-Mueller 2011, Ballas 2013, Schwanen and Atkinson 2015). This study draws on sociology, psychology, economics, and geography.

Happy or Unhappy Cities?

There is a great deal of "hand-waving" among social scientists implying that happiness has its place in big cities. While there is no evidence to support it, the proposition that people are

happy in the city has been assumed by many to be a self-evident truth, an axiom. Notable enthusiasts of happy city living are Jane Jacobs in her classic "The Death and Life of Great American Cities" ([1961] 1993), and more recently Ed Glaeser in "Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier" (2011):

> There is a myth that even if cities enhance prosperity, they will make people miserable. But people report being happier in those countries that are more urban. In those countries where more than half of the population is urban, 30 percent of people say they are very happy and 17 percent say they are not very or not at all happy. [...] Across countries, reported life satisfaction rises with the share of the population that lives in cities, even when controlling for the countries' income and education.

This is a classic example of ecological fallacy: the fact that people are happier in more urbanized countries than in less urbanized countries, does not mean that people are happier in cities than in smaller areas. More urbanized countries are simply richer than less urbanized countries. This is one of the most agreed upon findings in happiness literature~~that in~~ : In a cross-section of countries, people are happier in more developed areas (e.g., Okulicz-Kozaryn 2011). ~~That urbanization~~ Urbanization leads to economic ~~development is another issue that~~ growth, but we know that economic growth does not lead to much happiness over time, especially in developed countries. I have discussed these issues in depth elsewhere <blind for peer review>. Another misleading statement from Glaeser (2011) follows:

> Cities and urbanization are not only associated with greater material prosperity. In poorer countries, people in cities also say that they are happier. Throughout a sample of twenty-five poorer countries, where per capita GDP levels are below

> $10,000, where I had access to self-reported happiness surveys for urban and non-urban populations, I found that the share of urban people saying that they were very happy was higher in eighteen countries and lower in seven. The share of people saying that they were not at all happy was higher in the non-urban areas in sixteen countries and lower in nine.

This statement is either due to unhappy sampling or cherry picking. Indeed, people are happier in cities in developing countries as shown by Berry and Okulicz-Kozaryn (2009), but in the rich countries, it is the other way round–the bigger the area, the more dissatisfaction. The ~~reason~~ fact that people are happy in ~~big areas~~ cities in poor countries is ~~not necessarily that the citiesare great; it~~ arguably not due to cities' "greatness." It may be simply that life outside of the city in a poor country is unbearable and lacking the necessities, such as food, shelter, sanitation, and transportation. ~~But even more simply, there is usually a great divide~~ There is usually an enormous gap in broadly understood quality of life or so called "livability" between urban and rural areas in developing countries. For instance, urbanites enjoyed three times higher income and consumption than rural dwellers in China in 2000 (Knight et al. 2006). Simply speaking, the urban happiness in developing countries is rather due to unfavorable conditions outside of cities, ~~than~~ not due to virtues of cities. As discussed later, cities have very few virtues, but many vices.

In addition to the positive side, the affirmation of city life, there is a negative side, a condemnation of suburban life–contemporary scholars also build their argument in favor of city living by arguing against suburban living. There are ~~at least two~~ several books dedicated to condemnation of suburban sprawl as opposed to dense city living ~~. And there are~~ (Kay 1997, Duany et al. 2001, Dreier et al. 2005, Kunstler 2012), and many articles (e.g., Ewing 1997, Frumkin 2002, Ewing et al. 2003). ~~Much of this~~ This criticism is for good reason–

there are problems associated with sprawl. Yet, it is ~~often overlooked~~ usually overlooked (Martinson (2000) is a notable exception) that not only do Americans prefer smaller areas as documented long time ago by Fuguitt and Zuiches (1975) and Fuguitt and Brown (1990), but they are also happier in smaller areas as ~~results from present study suggest~~present study argues. There is a conflict–residents prefer and are happier in small areas, but academics, policy makers and planners promote cities as "better" places. In addition, enthusiasts of city living~~and proponentsor~~ , proponents, and opponents of suburban living miss the point that people are happiest neither in cities nor in suburbs, but in small towns and villages.

Arguably, although not directly tested in the present study, people want to be close to nature and are happy in natural settings. Adam Smith observed:"The beauty of the country, besides, the pleasures of a country life, the tranquility of mind which it promises, and wherever the injustice of human laws does not disturb it, the independency which it really affords, have charms that more or less attract everybody" (Smith 1776, :IIIi). Animals, plants, landscapes, and wilderness benefit our wellbeing (Frumkin 2001). Exposure to nature produces positive emotions and positive affect (Mayer et al. 2009). Nature helps recover from pre-existing stress, immunizes and protects from future problems, helps to concentrate and think more clearly, reduces frustration and increases patience (Pretty 2012). For a literature review of nature's benefits see Maller et al. (2006) and especially Pretty (2012). This is one of the possible mechanisms explaining urban unhappiness–there is simply less nature in cities than elsewhere. This hypothesis is not directly tested, however. There is simply no variable to measure nature in the dataset used here. An indirect test is conducted using city variables–it is assumed that the larger the place, the less nature. Of course, in such case lack of nature confounds with other city attributes, but still based on the above review, it is reasonable to argue that lack of nature contributes to city unhappiness. For more discussion of nature and

happiness see (Okulicz-Kozaryn 2015).

Of course, the negative side of the city living has been noticed before–it was succinctly summarized by Wirth (1938) over 70 years ago, and by many others afterwords, notably ~~Clause~~ Claude S Fischer (1982, 1976, 1975, 1973, 1972) ~~.~~ and White and White (1977). Cities exemplify mechanical society without much community (Tönnies [1887] 2002), they overstimulate (Simmel 1903) and are unhealthy to human brain (Lederbogen et al. 2011). City intensifies vice, crime, and conspicuous consumption; labor specialization and industrialization that accompany urbanization kill spontaneity and joy (Park 1915, Park et al. [1925] 1984, Veblen 2005a,b, Wirth 1938). City is full of pollution, dirt, noise, crowding, poverty, beggary, monotony of the buildings (senseless chunks) (Wirth 1938, White and White 1977). In short, we know that cities are in many ways incompatible with human flourishing and wellbeing. This study is the first, however, to show ~~that subjective well-being~~ precisely how subjective well being declines with size of a place~~. In, short at some point, a place is too big and unhappiness settles in. This begs a question, what is an optimal size of a place ?~~ , and that places larger than 200-700 thousand people are particularly unhappy.

Sometime ago there was some discussion of an optimal size for a place–the idea being that it is efficient to have many people living together, but beyond some point, further concentration does not make sense. The idea is that as place grows so do grow benefits and they grow faster than costs but at some point costs start to grow faster and there is a point when costs outweigh benefits. This line of research (e.g., Singell 1974, Elgin 1975) discontinued few decades ago–for more recent review see Capello and Camagni (2000), which concluded that it is difficult to calculate an optimal city size because every city is different. This study agrees with this perspective, and hence, a wide range in conclusion~~that a~~ : city is too big when it exceeds somewhere between 200-700 thousand people.

Before discussing the dataset used in this study, a brief overview of concept of happiness is provided. For simplicity, terms happiness and Subjective ~~Well-Being~~ Wellbeing (SWB) are used interchangeably. Ed Diener (1995, p. 851), a psychologist and a key happiness scholar, defined SWB as "people's cognitive and affective evaluations of their lives," or in little more elaborate words, "both cognitive judgments of one's life satisfaction in addition to affective evaluations of mood and emotions" (Diener and Lucas (quoted in Steel et al. 2008, p. 142)). This is ~~really~~ almost the same as the definition by Ruut Veenhoven (2008, p. 2), another key happiness scholar and a sociologist: "overall judgment of life that draws on two sources of information: cognitive comparison with standards of the good life (contentment) and affective information from how one feels most of the time (hedonic level of affect)." Some scholars make a distinction between happiness and life satisfaction–life satisfaction refers to cognition and happiness refers to affect. Life satisfaction is a cognitive aspect of happiness (Dorahy et al. 1998). This dichotomy is not explored further here, because there is only one survey item, which likely captures mostly life satisfaction but also happiness to some degree. Therefore the SWB definition by Diener et al. (1995) and Veenhoven (2008) seems most appropriate, and again, it is used interchangeably with term "happiness."

The happiness measure, even though self-reported and subjective, is reliable (precision varies), valid (Di Tella and MacCulloch 2006, Myers 2000), and closely correlates with similar objective measures of ~~well-being~~ wellbeing such as brain waves (Layard 2005). Unhappiness strongly correlates with suicide incidence and mental health problems (Bray and Gunnell 2006). Happiness not only correlates highly with other non-self reported measures, but also does not correlate with measures that are not theoretically related to it–happiness has discriminant validity (Sandvik et al. 1993). For a recent statement about validity and reliability see Diener (2009). Finally, to avoid confusion, this study investigates general/overall happi-

ness, not a domain-specific happiness such as neighborhood or community satisfaction.

~~Still, many scholars voice their skepticism about happiness. This is especially troubling if such criticism comes from scholars who are only just beginning to study happiness themselves, such as Angus Deaton,[3] while happiness have been studies scientifically for decades. This is just one example, but in general it is popular among economists to disparage happiness research. Curiously, economists do study happiness at the same time, and they even sometimes use term "happiness economics," yet most of them do not treat it seriously. There are of course exceptions–notably, Richard Easterlin and Andrew Oswald are both economists and serious happiness researchers. On the other hand, topic of happiness is treated seriously in psychology, where it naturally belongs.~~

As with any measure, there are, of course, some limitations of happiness measure. Much of happiness is hereditary (due to genes) (Lykken and Tellegen 1996). Adaptation (Brickman et al. 1978) does affect our happiness–we are on so called "hedonic treadmill"–we get used to both fortune and misfortune, even very major events such as winning millions in a lottery or loosing limbs in an accident. And our happiness is affected by various comparisons (Michalos 1985)–whatever happens to other people (and whatever happened to ourselves in the past) affects our current happiness. These issues, however, are not critical. Recently, Diener (2009) has provided a good discussion of why potential problems with happiness are not serious enough to make it unusable for public policy. More statements supporting validity, reliability and precision can be found in Myers (2000), Di Tella and MacCulloch (2006), Layard (2005), Bray and Gunnell (2006), Sandvik et al. (1993), Clark et al. (2008).

[3] ~~For instance, see this interview . Also, at a recent conference I have heard happiness researchers voicing concerns over usefulness of happiness research just because Angus Deaton was not convinced to it. Just because Angus Deaton is very knowledgeable in some areas of economics does not mean that he knows much about happiness.~~

Data

This study uses U.S. General Social Survey (GSS). Data and documentation are at `http://www3.norc.org/gss+website`. A cumulative file for ~~1972-2008~~ 1972-2012 is used. For GSS definitions of size of a place and happiness see appendix A, and for frequency figures (and coding) of all variables see appendix B. The outcome of interest (dependent variable) is HAPPINESS. The main explanatory (independent) variable is size of a settlement. Size of a settlement is defined in three ways to show that the results are robust to the definition. First, it is simply population size in 1,000s (SIZE). Then deciles of this variable are calculated to investigate ~~see~~ if there are any nonlinearities in its relationship to HAPPINESS. Two other variables are used under their original GSS names: XNORCSIZ and SRCBELT. Both variables categorize areas into metropolitan areas, big cities, suburbs, and unincorporated areas. The advantage of SIZE is that it allows to calculate happiness 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. GSS does not provide density variable~~, as discussed later~~.

The choice of control variables for regressions is based on the literature (also, see extended discussion in the appendices). Those variables are controlled for, because they predict happiness as shown in the literature, but they are not of direct interest to this study and hence they are not discussed in great detail. Exploring interactions of these variables with city size may be an interesting topic for the future research, but it is beyond scope of this study, which focuses on elaboration of ~~the size variable~~city measurement.

What makes people happy? Young and old people are happy (e.g., Sanfey and Teksoz 2005)–large cities may attract the young and repel the old. Income boosts happiness and unemployment depresses it (e.g., Di Tella et al. 2001b,a, Di Tella and MacCulloch 2006).

Being married helps with happiness (e.g., Myers 2000, Diener and Seligman 2004). Blacks are less happy than Whites in the ~~U.S.~~ US (e.g., Berry and Okulicz-Kozaryn 2009, 2011), and they are traditionally concentrated in cities. Hence, it is important to control for this variable in the context of urban unhappiness. Democrats are less healthy (Subramanian and Perkins 2009) and less happy (Jost et al. 2009, Napier and Jost 2008, Jost et al. 2003), and cities are also predominantly Democrat.[3] To better account for ideology and political values, liberalism is also controlled for. There are a few other important variables, such as health and social capital–because they are missing for many respondents in GSS, their discussion is postponed to the appendix C, where robustness checks are covered. Furthermore, there is an extended discussion of control variables in my earlier research on this topic, which I do not intend to copy here <blind for peer review>.

Results and Discussion

The empirical part of this paper attempts to find when a city is too large. That is, there is likely to be a point at which advantages of size are overcome by costs. Again, this research is inspired by urban sociologist Claude S Fischer, who asked future research to do the following: "The very largest cities may be too large and may contribute modestly to unhappiness. Future research should be directed at replicating this finding and establishing a point of inflection in the size of continuum." The following graphs show happiness by city size using three operationalizations. Figure 1 shows that there is a happiness gradient by size of the settlement, and more than that. As Fischer (1973) suggested, it is clearly the biggest cities that are much less happy than all smaller places. In other words, the largest decline in

[3]For instance see ~~:~~ http://www.forbes.com/sites/markhendrickson/2012/11/15/what-explains-the-partisan-divide-between-urban-and-non-urban-areas/, ~~,~~ ~~,~~ and http://www.theatlantic.com/politics/archive/2012/11/red-state-blue-city-how-the-urban-rural-divide-is-splitting-ar 265686/

happiness is observed for the largest cities. Figure 2 shows the same pattern: the largest cities ($> 250,000$ inhabitants) are least happy, and there is a small happiness gradient for other areas: the smaller the area, the happier the people. Figure 3 confirms the pattern using yet another definition of size: the 12 largest SMSA (Standard Metropolitan Statistical Areas) are least happy, followed by the largest 13-100 SMSA and there is less difference in happiness among smaller areas. These figures show that unhappiness intensifies at somewhere between 200 and 700 thousand people. There are only about 60 cities in the ~~U.S.~~ US with a population larger than 300 thousand. These unhappy cities are large–much larger than census definition of an urban area (2.5 thousand), and larger than a central place (50 thousand). A person does not have to give up city living to be happy, she just needs to avoid the biggest cities. There are usually only one or two such cities per state.

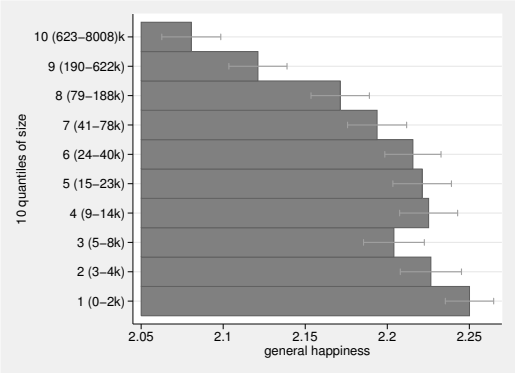

Figure 1: Average happiness by deciles of SIZE. 95% confidence intervals shown. The gradient is smooth (monotonic) except a bump at 3rd decile, for which I do not have an explanation.

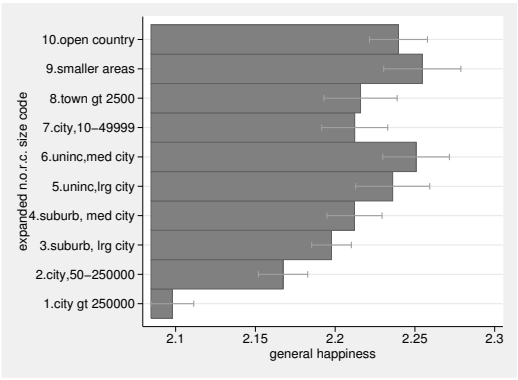

Figure 2: Average happiness by levels of XNORCSIZ. 95% confidence intervals shown. Note that sizes or densities on y axis are not necessarily ordered in ascending order and that unincorporated areas (both medium and large) are quite happy.

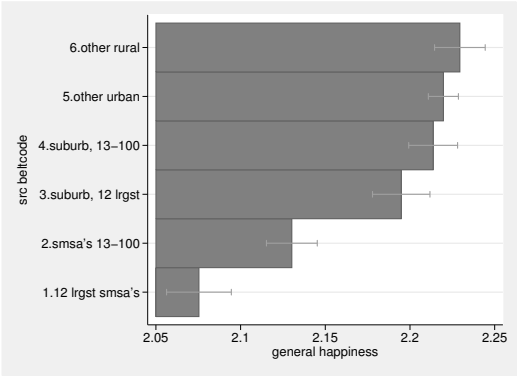

Figure 3: Average happiness by levels of SRCBELT. 95% confidence intervals shown.

Fischer (1973) was correct by suggesting that at some point the city may be too big. The biggest cities are clearly least happy, and there is less difference among smaller areas, although the happiness gradient persists. In general, the smaller the place, the happier the people. The patterns from the above figures hold when controlling for other relevant predictors of happiness. Figures 4, 5 and 6 show predicted probabilities of being very happy. The corresponding regressions are in the appendix C in columns marked "a1." The subsequent columns are the robustness checks using more covariates.

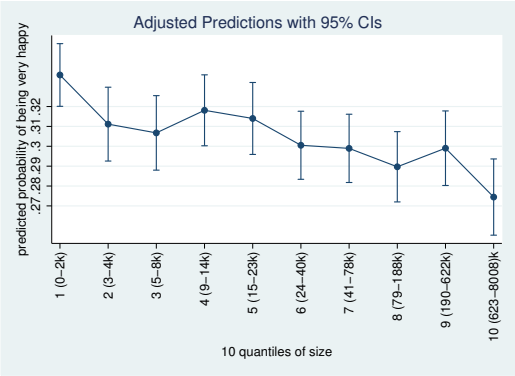

Figure 4: Probability of being "very happy" by deciles of city size.

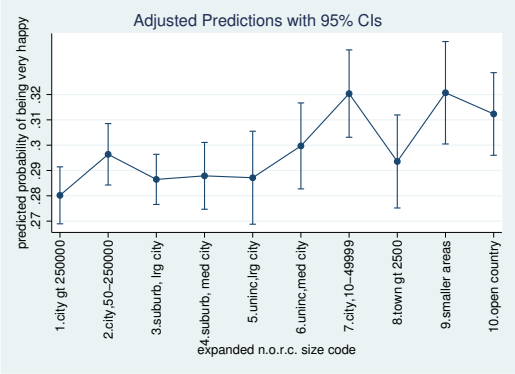

Figure 5: Probability of being "very happy" by XNORCSIZ.

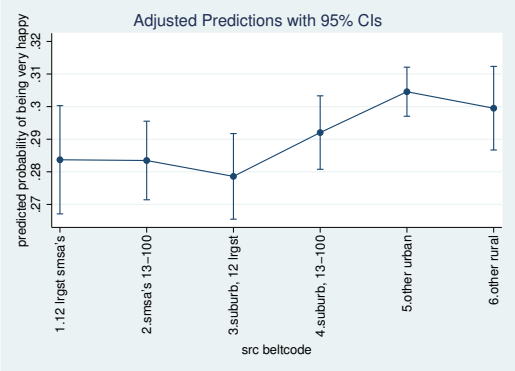

Figure 6: Probability of being "very happy" by SRCBELT.

Apart from an interesting dip in happiness at around 2.5-10 thousand people (figures 4 and 5), for which I have no explanation, the happiness gradient persists. Perhaps, such places already strip residents of their contact with nature that is plentiful in villages and

open country. On the other hand, they are not big enough to provide residents with city amenities. It would be an interesting topic for future research to explore it further. Another interesting topic would be to explore how a distance from large city affects a person–we know that Americans want to live in sparsely populated areas, yet close to a major city (Fuguitt and Brown 1990, Fuguitt and Zuiches 1975).

Is the magnitude of the effect practically substantial? If a person moved from one decile of SIZE to the next smaller decile, say from a city of 250 thousand to a city of 100 thousand, or from a city of 20 thousand to a city of 10 thousand, using a conservative estimate of 0.5% increase in probability of being very happy (from figure 4), every 200th person would become very happy. This is not something we should disregard. Say, that 20% of Americans (roughly 6 million) move to a slightly smaller area (by one decile), then 30,000 would become very happy. This is a substantial effect. While this effect is not ~~big~~very large, even a finding of no effect would be worth reporting. Again, for some reason,[4] it is fashionable[5] in ~~public policy and public administration~~ social science to imply that people are happier in the cities than elsewhere (e.g., Jacobs [1961] 1993, Glaeser 2011).

This study has focused on the level of happiness by size of a place. But it is worth mentioning that happiness dispersion (standard deviation) also varies slightly by size of a place. Not only largest cities are least happy, but they are also most unequal in happiness. For details see appendix B.

[4] I can speculate that public policy and public administration scholars imply that cities are happy because that's where their work is focused. Most people live in cities, and most policies are crafted for urban areas.

[5] I am using a non-scholarly word "fashionable" on purpose, to show, that a view that people are happy in cities is non-scholarly.

Conclusion

What is the message of this study? First, it is not only that people prefer smaller areas as Fuguitt and Brown (1990), Fuguitt and Zuiches (1975) have shown, but people are also happier in smaller areas. Second, it supports Fischer's hypothesis (1973) that the big cities are too big: a clear drop in happiness happens when city size exceeds somewhere between 200 and 700 thousand. ~~Finally,~~ This is close to estimate by Chen et al. (2015) for China. In China people become less happy in places larger than 500 thousand (Chinese are happiest in places 200-500 thousand, not in the very smallest areas as in the US).

Importantly, these results counter the contemporary common wisdom in academia. Much of ~~the public administration profession implies~~ public policy/administration and economics assumes or argues that cities are "better" than ~~suburbs, and again there are many problems with suburbs, but the results show that , if anything, people are happier in suburbs than in big cities , even controlling for other predictors of happiness~~smaller areas, but people are happiest in smallest areas despite the fact that these areas seem largely forgotten by academics, policy makers, and businesses. It is the largest cities that are considered "the best." Savitch (2010) proposed the "4 C" measure of city greatness: Currency conveys the unique attributes of a city's fundamental values and its ability to form, lead or dictate the temper of the times. Cosmopolitanism entails an ability to embrace international, multicultural or polyethnic features. Concentration is defined by demographic density and productive mass. Charisma is based on a magical appeal that generates mass enthusiasm, admiration or reverence. By this definition largest cities are greatest, and counterintuitively, as this study argues, these places are least happy of all.

This study does not defend suburbs. On the contrary, suburbs are much less happy than small cities, towns, and villages and this is yet another finding of this study. Residential

debate is usually about cities v suburbs, while smaller areas are forgotten. The omission of smaller places from residential debate is arguably due to the benefits of agglomeration economies and economies of scale found in metropolitan areas that make smaller places irrelevant. But this may change soon. Information and creative sectors are becoming increasingly important–jobs that are not creative or extremely complex will be automated (Brynjolfsson and McAfee 2014). Much of the creative and complex tasks are done on a computer–thanks to internet these tasks can be done from anywhere, including small towns and villages. Still, it is not entirely true that "the world is flat"(Freidman 2005). Indeed, "world is spiky" (Florida 2008)–place matters and it will matter in the foreseeable future. Yet having to live in the metropolitan area (city or suburb) or having to commute everyday to one's workplace will probably be less necessary in the future. ~~Much of the creative or highly complex work can be done over internet, and commute may be required much less often.~~

Findings of this study can be used by policymakers in the spirit of Stiglitz et al. (2009), who recently urged policymakers to pay attention to happiness. America is (sub)urbanizing, yet people are unhappy in cities (and in suburbs) as compared to smaller areas. Tax/subsidy incentives to promote what makes people happy (and healthy) make sense. City living is ~~unhealthy, too~~ not only unhappy but also unhealthy (e.g., Lederbogen et al. 2011).~~Again, this study is not promoting suburban sprawl, long commute, and big suburban houses~~[6] Sprawl, however, is not a solution. Ideally, people should live in villages, towns, and small cities as they used to for millennia, but unfortunately due to overpopulation, metropolis will stay with us for the foreseeable future. Fundamentally, results from this study are important for everyone: if you want to be happy, avoid large cities. Again, most Americans intuitively know that–they prefer smaller areas (Fuguitt and Brown 1990), and they should trust their

[6] To be fair, while city living is clearly more unhealthy than rural living, it is rural living that generates more pollution and uses more resources (Meyer 2013). Still, much of that is due to overconsumption–we could consume less and live in less dense areas more sustainably.

instincts.

There are several limitations, and these are, at the same time, directions for future research. First, this is an observational of correlational study, and as any other such study, it cannot claim causality. Testing and in-depth discussion of the underlying causal mechanism is beyond the scope of this observational and exploratory study; for discussion see <blind for peer review>. It is well known for some time, that even panel data estimation does not guarantee causal inference, and one ~~really~~ needs experimental data to argue causality with confidence (e.g., Shadish et al. 2002). Yet, correlational studies are not without value, and often, if not typically, causality is first discovered in such studies–for instance, smoking has been found to cause cancer in a correlational study first–for discussion see Blanchflower and Oswald (2011), Oswald (2014). Furthermore, a true experimental design usually is not possible–one cannot assign randomly people to cities and villages. Last but not least, experimental designs typically suffer from low or non-existent external validity, and hence, they are not an absolute and obvious improvement over correlational studies (e.g. Pawson and Tilley 1997). In what follows, some other limitations are discussed; and also a case is made why these other limitations are not critical either.

This study argues that it is the size of ~~the~~ a place that makes its residents unhappy. There are, however, several alternative explanations, factors that correlate with size of a place and affect happiness, and may bias results. Regression models do not control for them, because GSS does not contain appropriate variables. People in big cities may have higher expectations than people elsewhere–they may be the so-called "over-achievers" who never get completely satisfied.[7] On the other hand, there are many poor people either stuck (cannot afford to move) in the cities, or many poor who came to cities looking for a better life. Much of their

[7]This idea comes from a friend of mine, who works for one of the "Big Four" business consulting firms in a big city and that's what she has observed among her colleagues.

misery, however, should be picked up by income~~and racevariables.~~ , race, and other variables. Last but not least, some of the arguably most unhappy urban dwellers are unaccounted for, that is, cities are in fact even less happy than argued here. These dwellers include homeless people, addicts, criminals, prostitutes, and so forth.[8]

~~Ideally, density of population should be controlled for–it correlates with size of a place (but not exactly). Higher density predicts lower trust , and trust is a good predictor of mental health . Third, social~~ Social support is important for happiness (Diener 2012), and it seems that people in cities lack it (Wirth 1938)–ideally it should be controlled for directly, but the trust variable ~~may~~ used in this study should pick up some of it. ~~Fourth, it may not be the size of the cities , but pollution and noise in cities. Both pollution and noise make people unhappy.~~ Urbanites are less trusting than others. In largest cities about 32% of respondents think that most people can be trusted, while in areas smaller than 190 thousand 39% of people are trusting.

As mentioned earlier~~in the footnotes~~, specificity is sacrificed to gain generality. Another study could do the opposite–it could focus on a set of specific cities, or a specific region/state. That could be achieved using restricted use/geocoded version of GSS or the Behavioral Risk Factor Surveillance System. And it would be worthwhile to explore further why there is a happiness dip at around 2.5-10 thousand of people. Is it, as speculated earlier, that these places are big enough to kill the contact with nature, and not big enough to provide the city amenities~~?~~ .

Finally, larger cities are likely to have more social polarization: income/wealth inequality, residential segregation, and so forth. These are ~~very~~ important factors to consider; however it is the limitation of the (publicly available) GSS dataset: geographical location of respondent cannot be identified. Use of geocoded data for the study of urban malaise will be an important

[8] I am grateful to an anonymous reviewer for this point.

contribution and a great topic for future research. It would allow for the separation of the effects of city size per se from the effects of compositional differences of bigger cities.

Appendix A: the actual GSS questions: size of settlement and happiness.

Dataset: General Social Surveys, 1972-2006 [Cumulative File]

Variable size : SIZE OF PLACE IN 1000S

Literal Question

Size of Place in thousands

A 4-digit number which provides actual size of place of interview (Cols. 166-169). Remember when using this code to add 3 zeros. Listed below are the frequencies for gross population categories.

Descriptive Text

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 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.

The source of the data is the 1970 U.S. Census population figures published in the PC (1) -A series, Tables 6 and 10. For cases from the 1980 and 1990 frames analogous tables from the 1980 and 1990 Censuses were used. See Appendix N for changes across surveys.

Variable xnorcsiz : EXPANDED N.O.R.C. SIZE CODE

Literal Question

NORC SIZE OF PLACE

PostQuestion Text

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.

The source of the data is the 1970 U.S. Census population figures published in the PC (1) -A series, Tables 6 and 10. Practically, the codes '6' and '10' are localities not listed in Table 6 (Population of Incorporated Places and Unincorporated Places over 1,000). For the 1980 frame cases analogous tables from the 1980 Census were used.

Descriptive Text

See Appendix T, GSS Methodological Report No. 4.

Variable srcbelt : SRC BELTCODE

Literal Question

SRC (SURVEY RESEARCH CENTER, UNIVERSITY OF MICHIGAN) NEW BELT CODE

Descriptive Text

The SRC belt code is described in Appendix D: Recodes. See Appendix N for changes across surveys. See Appendix T, GSS Methodological Report No. 4.

Intent of Recode

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.

Method of Recode

This recode assigns codes to the place of interview. City
characteristics were determined by reference to the
rank ordering of SMSAs in the Statistical Abstract of the United
States, 1972, Table 20. Suburb characteristics
were determined by reference to the urbanized map in the U.S. Bureau
of the Census, 1970 Census ofPopulation, Number of Inhabitants, Series
PC (1) -A. The "other urban" codes were assigned on the basis of
county characteristics found in Table 10 of the 1970 Census of
Population, Number of Inhabitants. For cases
from the 1980, 1990, and 2000 frames analogous tables from the 1980 or
1990 Census were used.

Variable happy : GENERAL HAPPINESS
Literal Question
157. 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?

Appendix B: Additional Descriptive Statistics.

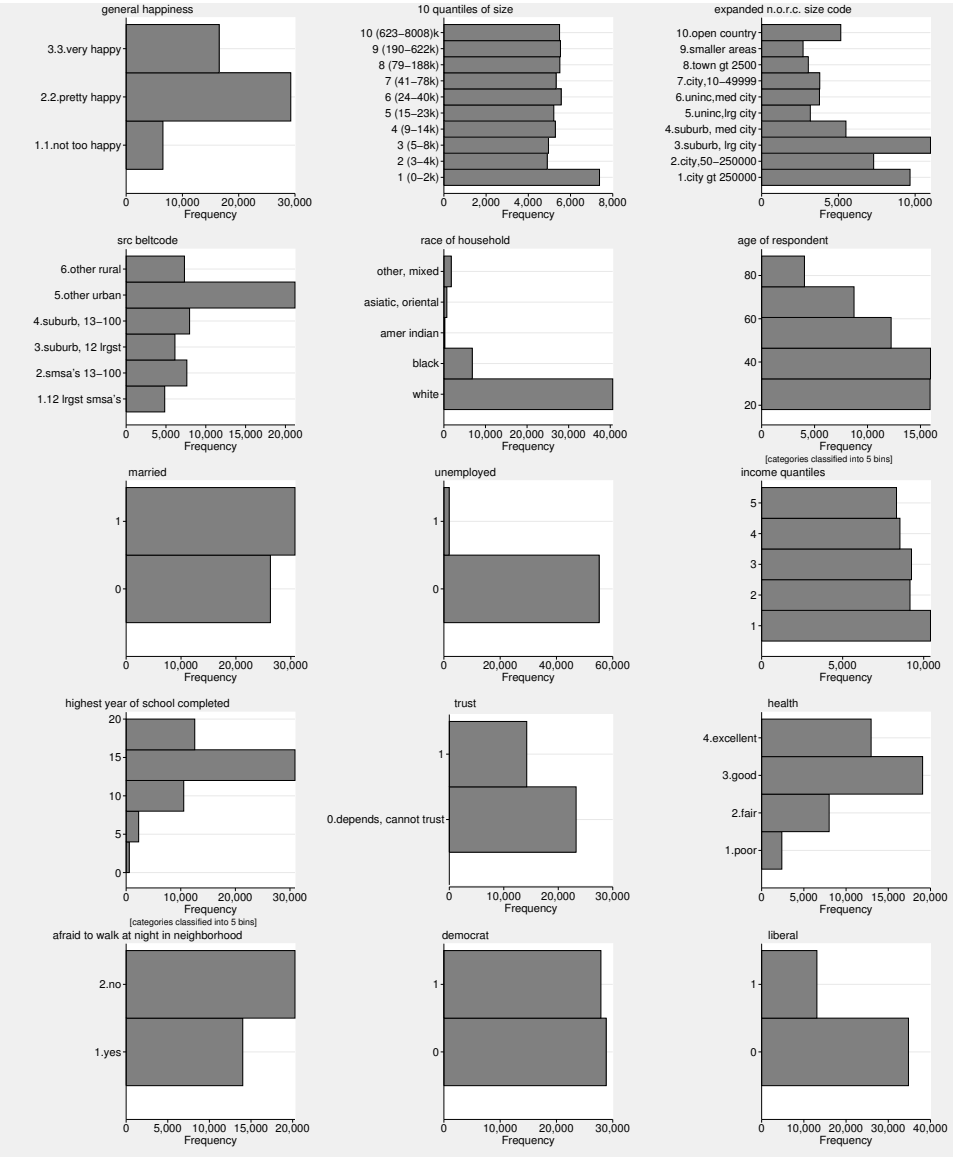

Figure 7: Variables' distribution.

deciles of size	happiness standard deviation
1 (0-2k)	0.62
2 (3-4k)	0.63
3 (5-8k)	0.64
4 (9-14k)	0.63
5 (15-23k)	0.63
6 (24-40k)	0.62
7 (41-78k)	0.64
8 (79-188k)	0.64
9 (190-622k)	0.64
10 (623-8008)k	0.65

Table 1: Happiness inequality (standard deviation) by deciles of size.

srcbelt	happiness standard deviation
12 lrgst smsa's	0.65
smsa's 13-100	0.64
suburb, 12 lrgst	0.64
suburb, 13-100	0.63
other urban	0.63
other rural	0.63

Table 2: Happiness inequality (standard deviation) by srcbelt.

city gt 250000	0.65
city,50-250000	0.64
suburb, lrg city	0.63
suburb, med city	0.62
uninc,lrg city	0.63
uninc,med city	0.63
city,10-49999	0.62
town gt 2500	0.63
smaller areas	0.62
open country	0.64

Table 3: Happiness inequality (standard deviation) by xnorcsiz. Note: there is an interesting uptick in happiness for open country.

Appendix C: Regression results and robustness checks.

Table 4: Ordinal logistic regressions of happiness. Odds ratios shown. Size variables are defined in figure 7.

	a1	a2	a3	a4
general happiness				
d_size=2	0.907**	0.898**	0.840**	0.901
d_size=3	0.885***	0.876***	0.863*	0.934
d_size=4	0.945	0.926*	0.868*	0.931
d_size=5	0.925*	0.904**	0.903	0.974
d_size=6	0.910**	0.876***	0.871*	0.841*
d_size=7	0.899**	0.867***	0.873*	1.008
d_size=8	0.884***	0.853***	0.810***	0.824**
d_size=9	0.869***	0.834***	0.819***	0.896
d_size=10	0.827***	0.798***	0.839**	0.817*
age of respondent	0.952***	0.950***	0.956***	0.961***
age squared	1.001***	1.001***	1.001***	1.000***
married	2.063***	2.118***	2.246***	2.447***
unemployed	0.536***	0.548***	0.531***	0.580***
income quantiles	1.235***	1.195***	1.113***	1.095***
white household	1.160***	1.145***	1.000	0.968
black household	0.846***	0.857**	0.814**	0.847
democrat	0.928***	0.933***	0.918**	0.942
liberal	0.988	0.965	0.987	0.984
highest year of school completed		1.044***	1.010	1.005
trust			1.450***	1.379***
health			1.775***	1.830***
afraid to walk at night in neighborhood			1.093**	1.177***
year dummies	yes	yes	yes	yes
region dummies	yes	yes	yes	yes
occupation dummies	no	no	no	yes
cut1				
constant	0.150***	0.239***	1.207	1.359
cut2				
constant	3.078***	4.924***	25.122***	29.916***
N	35495	35455	12666	8278
*** p<0.01, ** p<0.05, * p<0.1; robust std err				

Table 5: Ordinal logistic regressions of happiness. Odds ratios shown. Size variables are defined in figure 7.

	a1	a2	a3	a4
general happiness				
xnorcsiz=2	1.082**	1.085**	1.018	1.121
xnorcsiz=3	1.032	1.039	1.028	1.066
xnorcsiz=4	1.039	1.059	0.993	1.053
xnorcsiz=5	1.035	1.050	0.903	0.981
xnorcsiz=6	1.099*	1.124**	1.094	1.069
xnorcsiz=7	1.211***	1.229***	1.087	1.084
xnorcsiz=8	1.068	1.099*	1.043	1.032
xnorcsiz=9	1.213***	1.256***	1.193*	1.334**
xnorcsiz=10	1.167***	1.217***	1.165*	1.225*
age of respondent	0.952***	0.950***	0.956***	0.961***
age squared	1.001***	1.001***	1.001***	1.000***
married	2.062***	2.117***	2.246***	2.444***
unemployed	0.537***	0.549***	0.533***	0.586***
income quantiles	1.240***	1.199***	1.116***	1.101***
white household	1.167***	1.154***	1.008	0.971
black household	0.847***	0.859**	0.815**	0.837
democrat	0.927***	0.933***	0.919**	0.941
liberal	0.989	0.966	0.984	0.981
highest year of school completed		1.044***	1.009	1.005
trust			1.446***	1.375***
health			1.776***	1.830***
afraid to walk at night in neighborhood			1.099**	1.182***
year dummies	yes	yes	yes	yes
region dummies	yes	yes	yes	yes
occupation dummies	no	no	no	yes
cut1				
constant	0.181***	0.299***	1.472*	1.642*
cut2				
constant	3.699***	6.179***	30.647***	36.137***
N	35495	35455	12666	8278
*** p<0.01, ** p<0.05, * p<0.1; robust std err				

Table 6: Ordinal logistic regressions of happiness. Odds ratios shown. Size variables are defined in figure 7.

	a1	a2	a3	a4
general happiness				
srcbelt=2	0.999	0.997	0.896	0.993
srcbelt=3	0.975	0.974	0.864*	0.947
srcbelt=4	1.042	1.047	0.963	1.027
srcbelt=5	1.106**	1.125***	0.990	1.080
srcbelt=6	1.080	1.118**	1.033	1.094
age of respondent	0.952***	0.950***	0.956***	0.962***
age squared	1.001***	1.001***	1.001***	1.000***
married	2.066***	2.121***	2.252***	2.444***
unemployed	0.537***	0.549***	0.533***	0.584***
income quantiles	1.238***	1.198***	1.116***	1.100***
white household	1.162***	1.148***	1.004	0.973
black household	0.844***	0.854***	0.807**	0.845
democrat	0.927***	0.932***	0.919**	0.940
liberal	0.987	0.965	0.985	0.981
highest year of school completed		1.044***	1.009	1.005
trust			1.450***	1.379***
health			1.774***	1.829***
afraid to walk at night in neighborhood			1.102**	1.181***
year dummies	yes	yes	yes	yes
region dummies	yes	yes	yes	yes
occupation dummies	no	no	no	yes
cut1				
constant	0.178***	0.293***	1.372	1.607
cut2				
constant	3.645***	6.040***	28.541***	35.306***
N	35495	35455	12666	8278
*** p<0.01, ** p<0.05, * p<0.1; robust std err				

Base models ~~in figures below~~ (columns "a1") include usual happiness predictors, and race dummies. Race dummies attenuate urban-rural happiness gradient because more minorities live in bigger areas and they are less happy than Whites. Still, the gradient persists. Columns a2 and a3 add additional controls. Cities have economic profiles that determine labor market and demographic characteristics of the population, which may impact happiness.[9] In an effort to account for this, column "a4" adds dummies for major occupation categories (International Standard Classification codes): professional, administrative/managerial, clerical, sales, service, agriculture, production and transport, craft and technical. Results persist. Still future research may improve by using geocoded data and controlling for actual economic profile of each place.

Fischer (1973) suggested that it may not be that the city size by itself produces unhappiness, but it is the state of the American cities, their current problems (crime, congestion, etc). I elaborate models to account for many city problems: crime, lack of trust, and potential health problems due to urban stress, and the happiness gradient still persists. Trust, a proxy for social capital, is key for happiness. One of the reasons why people could be less happy in bigger cities is because as Wirth (1938) argued that human relationships are superficial, but also because city is a subcultural mosaic (Fischer 1975), and that may be a reason why generalized trust is lower in cities as I found here. [10] Hence, lack of trust would bias the coefficient on size of a settlement. Trust variable attenuates only slightly the negative effect of city on happiness. The point of this robustness exercise is to show that Wirth (1938) was right saying that city unhappiness happens because of the size, not because of other negative things that happen in city (e.g., crime).

How about happiness in suburbs? Note the odds ratios on suburbs ($xnorcsiz = 3$,

[9] I am grateful to an anonymous reviewer for this point.

[10] ~~Results are available upon request.~~

$xnorcsiz = 4$) in table 5: they are always bigger than 1: people are slightly more happy in suburbs than in the biggest cities, yet much less happy than in towns and open country. Odds ratios on suburbs are not always significant but their p-values are close to 0.1–they will be significant in couple of years when GSS adds new waves.

It could be argued that it may not be the size of the cities, but pollution and noise in cities. Both pollution (MacKerron and Mourato 2009) and noise (Weinhold 2012) make people unhappy. GSS does not measure pollution and noise, and it remains for the future research to control for them. Yet, it can be also argued that both pollution and noise are defining characteristics of cities, and hence they are accounted for in this study by variables measuring city size. To be sure, cities differ in terms of noise and pollution, but in general the larger the settlement, the more noise and pollution.

Finally, I have recoded ordinal happiness into a binary variable by coding "not too happy" as "0" and collapsing together "pretty happy" and "very happy" into "1". Results were similar, and if anything urban unhappiness developed at smaller sizes and with greater magnitude than in the ordinal model. Results are available upon request.

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