

CROWDED!

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EL COLEGIO DE MEXICO

By Isaac Asimov

What with one thing or another, I give a number of talks here and there, and these talks are usually followed by a question-and-answer period. That is the fun-part -- or the agony part, depending on how things go.

Very often the game of place-the-speaker-on-the-spot is played and the speaker, if he happens to be in rare form, can win with a quick and unexpected bit of repartee. The reward is a roar of laughter from the audience that is more warming than the honorarium.

I wish I could say that I am always ready with the crushing retort, but, alas, I am not.

Sometimes I come through however, and an example that shall live forever in my memory came once, just after I had looked at my wristwatch and said, as is customary, "I'm afraid we have time for only one more question."

Whereupon a young man in the audience jumped to his feet and said, "Dr. Asimov, could you give us, in the time remaining, your impression of what the world of the future will be like?"

And, without any perceptible hesitation, I answered, "Crowded!" and walked off the platform to a thunder of laughter and applause. -- Oh, boy, if I could only do that every time.

But you know, it isn't the world of the future alone that is going to be crowded. We are already crowded, and I would like to demonstrate that fact in a way that has not yet been done to death.

For instance, I live in a suburb of Boston, and no one can call Boston a small town. It is not a huge metropolis, but it is a thoroughly respectable city. It has a population of just about 616,000, and it is the largest city in New England.

And how many cities in the world do you think are larger than Boston? You may guess before you read further, if you wish --

Well, checking through the latest data in my library, I would estimate that there are at least 150 cities in the world that are larger than Boston. And somehow, as I stand in the shadow of the Prudential Tower and look about at the not-more-than 151st largest city in the world, I feel a little shrunken.

To be sure, Boston's boundaries are only an imaginary line on the map. Her houses and population spill over that line in every direction into a ring of suburbs, and the metropolitan area, or Greater Boston as it is called, has a population of some 2,600,000.

But we can't use that for comparison. Other cities have their metropolitan areas, too. Besides, a "metropolitan area" is not a single political entity. Each one of Boston's suburbs (and there are several dozen) has its own mayor, police and fire department, school system, and tax practices. This means that the "metropolitan area" is a hazy thing indeed, which grows and shrinks according to which suburbs you decide belong to it and which you decide don't. No, if we are going to try to come to some conclusions concerning cities, we had better choose something that is hard and fast, and that is the political city line.

There are a dozen cities in the United States alone that are larger than Boston, and, of these, six have a population of more than a million within the city limits proper. One million is a nice round number, so let's define a Great City, quite arbitrarily, as one that has a population of a million or more. The six Great Cities of the United States are, in order of population:\*

The United States

<u>City</u>	<u>Population</u>
New York	8,080,000
Chicago	3,520,000
Los Angeles	2,740,000
Philadelphia	2,030,000
Detroit	1,600,000
Houston	1,100,000

The total population of these six Great Cities is just about 19,000,000, and counting the population of the United States as about 195,000,000, this means that 9.7 percent of the American population, or just about one American in every 10, lives in a Great City. Consider the near-Great Cities and add the suburbs to all of them and our vision of small-town America vanishes in a puff of cliché.

But before you get so saddened you can't continue, let's ask a few questions,

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\* I am not using the 1960 Census figures but the latest estimates I can find. I am doing the same for foreign cities where the estimates are often quite rough and unreliable, but what can you do --

possibly amusing ones, concerning American cities. You'll find the answers at the back of the article but see how you do, first, without consulting maps and atlases. (I must admit I did.)

- (1) What is the largest city in the United States that is only the second largest city in its state?
- (2) What American city comes closest to being a Great City without being one?
- (3) The various American states tend to pick small cities as capitals out of a traditional distrust for big city "mobs." What is the largest city to serve as capital of a state?
- (4) What is the smallest?

Now let's move on. There are three countries that are more populous than the United States, and they are China (750,000,000), India (475,000,000) and the Soviet Union (230,000,000). Each, naturally, is rich in Great Cities. Let us begin with China, which has no less than sixteen Great Cities according to the best figures I can get:

<u>City</u>	<u>China</u>	<u>Population</u>
Shanghai		7,000,000
Peking		6,800,000
Mukden		3,100,000
Tientsin		2,900,000
Harbin		2,500,000
Chungking		2,200,000
Canton		2,150,000
Sian		1,500,000
Paotow		1,500,000
Taiyuan		1,500,000
Nanking		1,400,000
Lanchou		1,200,000
Poshan		1,200,000
Hsinking		1,150,000
Tsingtao		1,120,000
Chengtu		1,100,000

This seems an amazing collection of huge cities at first glance, but it is less amazing if you stop to think about it.

Consider first how many Great Cities there are in the world. (Care to make a quick guess before I tell you?) Well, there are eighty-eight altogether. China has nearly one-fifth of all of them within her borders, but why not? She has more than one-fifth the population of the world within her borders, after all.

The total population of these sixteen Great Cities of China is about 38,000,000, just twice the Great City population of the United States. But then, China has three and a half times our population. One five percent of China's population, or one out of 20, lives in a Great City. Compare this with our own one out of 10.

India has six Great Cities, and the Soviet Union has seven:

India

<u>City</u>	<u>Population</u>
Bombay	4,540,000
Calcutta	3,005,000
Delhi	2,300,000
Madras	1,840,000
Ahmedabad	1,250,000
Hyderabad	1,150,000

Soviet Union

<u>City</u>	<u>Population</u>
Moscow	6,334,000
Leningrad	3,218,000
Kiev	1,292,000
Gorky	1,066,000
Tashkent	1,061,000
Kharkov	1,048,000
Novosibirsk	1,013,000

The total population in the Great Cities of these countries is almost the same. It is 15,000,000 for the Soviet Union and 14,000,000 for India. However, India's total population is far greater than that of the Soviet Union, and that is reflected in the concentration of population within them. Whereas 6.5 percent of the population of the Soviet Union lives in its Great Cities, only three percent of the population of India do.

But we are not through. There are many nations less populous than the United States, and one of them, with just half our population, nevertheless has seven Great Cities, one more than we do. You may have guessed that

the nation is Japan. Its seven Great Cities are:

<u>Japan</u>	
<u>City</u>	<u>Population</u>
Tokyo	8,730,000
Osaka	3,200,000
Nagoya	1,900,000
Yokohama	1,600,000
Kyoto	1,285,000
Kobe	1,115,000
Kitakyushu	1,000,000

The total Great City population in Japan is 18,800,000, nearly that of the United States. One out of every five Japanese lives in a Great City.

All other nations have fewer Great Cities within their individual borders than do any of those already mentioned, but put them all together and there are forty-six Great Cities remaining. These are listed below in order of population:

<u>City</u>	<u>Nation</u>	<u>Population</u>
London	Great Britain	8,185,000
Cairo	Egypt	3,518,000
Rio de Janeiro	Brazil	3,223,000
Mexico City	Mexico	3,193,000
Sao Paulo	Brazil	3,164,000
Seoul	South Korea	2,983,000
Buenos Aires	Argentina	2,967,000
Diakarta	Indonesia	2,907,000
Paris	France	2,780,000
Rome	Italy	2,455,000
Madrid	Spain	2,443,000
Teheran	Iran	2,317,000
Sydney	Australia	2,256,000
West Berlin	West Germany	2,193,000
Melbourne	Australia	2,003,000
Karachi	Pakistan	1,913,000
Budapest	Hungary	1,900,000
Hamburg	West Germany	1,856,000
Milan	Italy	1,666,000
Vienna	Austria	1,634,000
Barcelona	Spain	1,634,000
Bangkok	Thailand	1,608,000
Caracas	Venezuela	1,590,000

<u>City</u>	<u>Nation</u>	<u>Population</u>
Alexandria	Egypt	1,588,000
Bogota	Colombia	1,488,000
Istanbul	Turkey	1,467,000
Lima	Peru	1,436,000
Saigon	South Vietnam	1,336,000
Lahore	Pakistan	1,296,000
Pusan	South Korea	1,271,000
Bucharest	Rumania	1,236,000
Warsaw	Poland	1,232,000
Naples	Italy	1,221,000
Montevideo	Uruguay	1,203,000
Montreal	Canada	1,191,000
Munich	West Germany	1,182,000
Manila	Philippines	1,139,000
Turin	Italy	1,117,000
Birmingham	Great Britain	1,106,000
East Berlin	East Germany	1,071,000
Guadalajara	Mexico	1,048,000
Glasgow	Great Britain	1,036,000
Taipei	Nationalist China	1,028,000
Prague	Czechoslovakia	1,011,000
Surabaya	Indonesia	1,008,000
Leopoldville	Congo	1,000,000

We can now summarize this information, first by nations, then by continents and finally for the entire planet.\*

There are thirty-six nations in the world that contain at least one Great City, and I will list them in order of total Great City population to the nearest hundred thousand:

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\* I suppose that I ought to apologize for all these statistics but consider -- If all else fails what topics of conversation these will make for cocktail parties. "Guess how many cities there are with populations of more than a million?" you can begin.

<u>Nation</u>	<u>Number of Great Cities</u>	<u>Total Great City Population</u>
China	16	38,000,000
United States	6	19,000,000
Japan	7	18,000,000
Soviet Union	7	15,000,000
India	6	14,000,000
Great Britain	3	10,300,000
Italy	4	6,500,000
Brazil	2	6,400,000
West Germany	3	5,200,000
Egypt	2	5,100,000
South Korea	2	4,300,000
Australia	2	4,300,000
Mexico	2	4,200,000
Spain	2	4,100,000
Indonesia	2	3,900,000
Pakistan	2	3,200,000
Argentina	1	3,000,000
France	1	2,800,000
Iran	1	2,300,000
Hungary	1	1,900,000
Austria	1	1,600,000
Thailand	1	1,600,000
Venezuela	1	1,600,000
Turkey	1	1,500,000
Columbia	1	1,500,000
Peru	1	1,400,000
South Vietnam	1	1,400,000
Canada	1	1,200,000
Poland	1	1,200,000
Rumania	1	1,200,000
Uruguay	1	1,200,000
Philippines	1	1,100,000
East Germany	1	1,100,000
Czechoslovakia	1	1,000,000
Nationalist China	1	1,000,000
Congo	1	1,000,000

Of course, total numbers aren't everything. What about Great City concentration of population? As I said earlier, 9.7 percent of the population of the United States live in Great Cities, but this is considerably exceeded by the percentage of the Japanese population that lives in Great Cities.

Does Japan hold the record? It does not. Three nations exceed its concentration of Great City population:

<u>Nation</u>	<u>Percent of Population in Great Cities</u>
Uruguay	45
Australia	38
Austria	22

Uruguay offers an astonishing spectacle. Almost half the population of that small land (a trifle larger than North Dakota in area) is squeezed into Montevideo, its capital and one Great City. The only thing I can think of which is comparable is the situation in New York State, somewhat smaller in size than Uruguay, but six and a half times as populous. Here 45 percent of New York State's population squeezes into its one Great City, New York City.

Australia is almost as lopsided. Almost two-fifths of its entire population dwell in its two Great Cities of Sydney and Melbourne. (It suddenly occurs to me that there are no less than 12 English-speaking Great Cities. This is surpassed only by the 16 Chinese-speaking ones.)

Perhaps even more astonishing is the case of Austria. Nearly one-quarter of its population crowds into its single Great City of Vienna. This must be considered in its historic setting. Prior to World War I, Vienna was the capital of Austria-Hungary, a much larger country than present-day Austria. The capital suited the country, but after World War I, Austria-Hungary was hacked into fragments and Vienna remained as the giant capital of a small remnant of the nation.

Budapest remained as the giant capital of another small remnant, so that nearly one-fifth of Hungary's population is crowded into that Great City.

There is a tendency among the older nations to have a Great City as their capital. Indeed, Warsaw, Paris, London, Bucharest, and many others grew and became Great Cities just because they were capitals.

Some of the newer nations, however, less encrusted with tradition, have deliberately created a capital, or adopted one, which is not a Great City, even though Great Cities are present and available in the nation. This is especially true of the English-speaking countries, with the glaring exception of Great Britain itself. Thus, we have Washington, D. C.; Canberra, Australia; and Ottawa, Canada; none of which are Great Cities. In nations long under English-speaking domination, we have Quezon City, Philippines; New Delhi, India; and Rawalpindi, Pakistan; again not Great Cities. Which leads me to --

- (5) There are three other nations among those possessing Great Cities which have non-Great City capitals. Which are they and what are the capitals?

Great Cities tend to exist in groups. The closest pair are West Berlin and East Berlin, but that is an accident of Cold War politics. They are essentially a single city, split between two governments.

Leaving that abnormal case to one side, the closest pair of Great Cities is Tokyo and Yokohama in Japan. The city limits of these two approach within four miles of each other. Compare this with the ninety miles that separate New York and Philadelphia, the closest American pair of Great Cities. Indeed, Japan also contains the best example of a Great City triplet. A squat triangle only thirty-five miles on its longest side will contain Kyoto, Osaka, and Kobe. So --

- (6) What is the most isolated of the Great Cities; that is, the one farthest removed from any other?
- (7) What is the most northerly of the Great Cities? The most southerly?
- (8) What is the most populous nation not to contain a Great City?

But let's pass on to continents -- Suppose we count offshore islands with the nearest continent: Japan and Indonesia with Asia, Great Britain with Europe and so on. Let's remember, too, that although Turkey is largely an Asian country, Istanbul is in the small segment of it that is in Europe. Let us remember, further, that two of the Great Cities of the Soviet Union (Tashkent and Novosibirsk) are in Asia. We have, therefore:

<u>Continent</u>	<u>Number of Great Cities</u>	<u>Total Great City Population</u>
Asia	42	91,700,000
Europe	25	51,300,000
North America	9	24,200,000
South America	7	15,100,000
Africa	3	6,100,000
Australia	2	4,300,000

The population of Europe and North America is more concentrated than that of Asia and South America. About 8 percent of the population of the first two continents lives in the Great Cities, as compared with not more than five percent of the population of the last two. Africa is far behind, with a concentration of only about two percent. It is Australia that carries off the award, though. Even counting New Zealand as part of the continent, the concentration is still 25 percent.

The total population of the eighty-eight Great Cities of the world is just about 193,000,000, almost exactly the population of the United States. This includes one out of every seventeen human beings on the Earth today.

And the number of Great Cities will increase each year, together with the total population living in them, both in actual numbers and in percentages of all humanity. I estimate that in the last half-decade alone, the list of Great Cities has increased by seven and their total population by 13,000,000.

Where it will all end, I don't know. I can only wait in terror as each day is more crowded than the one before. Ten years from now -- if we are all still alive -- I shall return to this theme and see how things have progressed.

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Education

Answers

- (1) Dallas, Texas; population 790,000 - outstripped by Houston, Texas.
- (2) Baltimore, Maryland, with a population of 925,000.
- (3) Boston, Massachusetts (aha!) but the distinction may not be lasting. Boston's population is dropping quickly (80,000 in the last six years), and capital cities such as Denver, Colorado, may overtake it before long.
- (4) Juneau, Alaska; population 7,200.
- (5) Bonn, West Germany; Brasilia, Brazil; and Ankara, Turkey.
- (6) Mexico City. It is about 1500 miles from the nearest Great City, Los Angeles.
- (7) Leningrad is farthest north; Melbourne farthest south.
- (8) You would naturally look for this nation in the most under-concentrated continent, Africa. It turns out to be Nigeria, which has a population of 56,400,000 and is the ninth most populous nation on Earth. It doesn't have a single Great City. It's largest city, Lagos (its capital) has a population of 665,000.

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