USING THE U.S. AND U.K. CENSUSES FOR COMPARATIVE RESEARCH

METROPOLITAN POLICY PROGRAM
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Rebecca Tunstall
London School of Economics

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ABOUT THE AUTHOR

Rebecca Tunstall is a non-resident senior fellow at the Brookings Institution Metropolitan Policy Program and a lecturer in housing in the Department of Social Policy at the London School of Economics.

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EXECUTIVE SUMMARY

Researchers, policymakers, and practitioners are constantly interested in international comparisons as a means to generate and test hypotheses and new ideas. Likewise, they have for centuries relied on census data as a key source of information about the nature and dynamics of nations.

This discussion paper, accordingly, reviews key features of the U.S. and U.K. censuses of population, and considers how the two canvasses can be used for comparative research on population, housing, and other key issues. To that end, it offers a guide to the surveys' respective approaches and definitions, and their similarities and differences—all with an eye to helping researchers assess their utility for bilateral comparisons.

On balance, the paper concludes that the two nations' censuses—despite their variations of method, terminology, and reporting—hold out exciting potential for comparative analysis.

More specifically, the review finds that:

- **In broad terms, the U.S. and U.K. censuses resemble each other.** Despite betraying traces of their divergent original rationales and users, both of these long-running canvasses have over time substantially converged. In recent decades, the two censuses have been carried out similarly. What they ask, the response rates, forms of analysis, and the way data are presented are generally comparable now.

- **At the same time, a number of differences between the censuses create pitfalls for comparative researchers.** These differences—while not insuperable barriers to comparative analysis—involve such important issues as the topics covered and questions asked, the categories employed, changes in methodology over time, differences in processing techniques, and differences in the spatial units employed to report results.

- **Yet even so, for all of those differences the two censuses are similar enough to support significant comparison of the U.S. and the U.K. on a wide range of topics.** Comparative research can also be carried out for a wide range of spatial units from nations to neighborhoods. And it can produce both comparative snapshots and trends comparisons over time.

In sum, the U.S. and U.K.censuses—despite their idiosyncracies—are more similar than different and furnish valuable information for comparative research. By employing a little ingenuity, researchers, policymakers, and practitioners will find in the two censuses a rich resource for future inquiry into the similarities and differences of the two countries.

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USING THE U.S. AND U.K. CENSUSES FOR COMPARATIVE RESEARCH

I. INTRODUCTION TO THE TWO CENSUSES

Researchers, policymakers, and practitioners are constantly interested in international comparisons as a means to generate and test hypotheses and new ideas. Likewise, they have for centuries relied on census data as a key source of information about the nature and dynamics of nations.

This discussion paper outlines the key features of the U.S. and U.K. censuses of population, their main similarities and differences, and how the two canvasses can be used for comparative research on population, housing, and other key issues. With a focus on the most recent censuses in 2000 for the United States and 2001 for the United Kingdom, the paper flags pitfalls for using the two sources comparatively, and it discusses how these potential problems can be overcome.

Comparative research has been a fruitful source of innovation in academia, and many countries have a history of sharing policy ideas. And for good reason: By understanding the basic demography of more than one country, as well as the ways key data can and cannot be compared, researchers and policymakers can better tune the process of policy analysis and exchange involving such key issues as the supply of labor, the demand for housing, and the need for services such as education and health care.

The United States and the United Kingdom are, moreover, enticing targets for comparative study. The two nations share many broad economic, social, and political similarities. Both rank among the richest countries in the world, and both are democratic and internally stable. Both play a global role in production and trade, as destinations for immigration, in international relations, and in politics and international affairs. They both have highly developed economies. Moreover, both countries are highly urbanized. They have complex education systems and educated populations, advanced health care, and other social provisions. Even among developed countries, the United States and the United Kingdom are often considered to be two of the more similar countries in economic, social, political, and cultural terms, and typologies of national systems used in political science, social science, and urban analysis usually categorize the two nations similarly, and often contrast them with groups of other developed nations in Europe and elsewhere. And yet, the countries also retain many important and fascinating differences in the characteristics of their populations (as are reported in other reports in this series), and also in some aspects of their censuses, as this report reveals.

International organizations such as the United Nations (UN), the Organization for Economic Cooperation and Development (OECD), and the European Union (EU), produce statistical publications on a wide range of social and urban issues across regions or the entire world. These draw heavily on population censuses carried out by the individual countries. The UN produces guidance for census design that includes international comparability as one of its criteria (United Nations 2001). Nevertheless, serious problems can arise in interpreting and comparing data from

different national censuses, each of which may differ significantly in methods and terminology. Studies produced by international organizations tend to cover a large number of countries and censuses, and they tend to focus on results rather than methods. Research for this discussion paper has confirmed how relatively limited is the array of information that is both easily available and accessible and that covers the details of censuses in more than one country, how they compare, and how they can be used for comparative research.

This discussion paper aims to fill a gap in comparative study of developed countries by investigating and explaining in detail how a major and fundamental data source—national population censuses—can be used to support comparative study. It focuses on the United States and the United Kingdom to provide a detailed example of bilateral comparability, and as a basis for further comparative research on these two countries.

II. CENSUS BASICS

The United States and the United Kingdom possess two of the longest running series of census data in the world. Both countries have had decennial censuses of population for more than two centuries (Table 1).

Table 1. Basic Features of the U.S. and U.K. Censuses

	United States	Great Britain/United Kingdom
Date started	1790	1801
Frequency	10 years	10 years
Breaks in Data Collection	none	1941
Most Recent	2000	2001
Administration	U.S. Census Bureau	Office for National Statistics in England and Wales, the General Register Office in Scotland, and the Northern Ireland Statistics and Research Agency

Source: www.census.gov; www.statistics.gov.uk/census2001

In the United States, no break has interrupted census-taking since 1790, while in the United Kingdom only one break as occurred: in 1941, during World War II. For its first two rounds, the British census originally covered only Great Britain, which includes England, Scotland, and Wales. In 1813, a census was taken in Ireland, which then lay under British control, and that census was repeated every 10 years from 1821 to 1911. In 1922, southern Ireland became the independent nation of Ireland, and commenced a separate census system. In combination with the constituent countries of Great Britain, the remaining provinces of Northern Ireland formed the United Kingdom of Great Britain and Northern Ireland. Censuses took place in Northern Ireland in 1926 and 1937. From 1951, the census in Northern Ireland followed the Great Britain pattern, with the addition of a mid-term census in 1966.[1]

[1] For more information see www.nisra.gov.uk/census/censushistory/censusireland.html

III. THE MAIN RATIONALES AND USES FOR THE CENSUSES

In America, the U.S. Constitution requires a decennial census to determine the distribution or "apportionment" of seats in the House of Representatives by states according to their populations. This accounts for the unbroken record of census-taking in the United States, despite civil war and two world wars. Following Supreme Court rulings in the 1960s, apportionment at both national and state levels is to be based primarily on population counts. The census was also required to supply counts of population by race under the Voting Rights Act of 1971 to monitor equity of access to voting rights. Population figures derived from the census are also used for allocating federal and state funding. Neighborhood income and home value data from the census are used extensively by private marketing organizations such as CACI, Inc., and Claritas (Weiss 2000). The census is currently administered under the U.S. Constitution, the Census Act 1976, and Title 13 of the United States Code.

The U.K. census also began about 200 years ago, but the aim was to provide government with more information about the rapidly growing population and changing society of the industrial revolution. Currently, the U.K. census is carried out in Great Britain according to the Census Act of 1920, amended by the Census (Protection of Confidentiality) Act of 1991, and the Census (Amendment Act) of 2000, which allowed a question on religion. In Northern Ireland, the census is carried out under the Census (Northern Ireland) Act of 1969.[2] The main users of the U.K. census are central government, local government, and health authorities, who use population numbers and other characteristics in allocating funding according to formulae and in planning services. There is also growing private-sector use. Census population figures do not enter into political districting, which is carried out under a series of independent commissions across the United Kingdom based on the number of registered voters (electoral rolls are updated annually and registration is obligatory).[3]

In both countries, the new accessibility of census data enabled by the internet since the 2000 and 2001 counts has enabled an explosion of its use by local government, voluntary and community groups, academia, and individuals.

In the United States, census population counts are politically and financially sensitive, and a mechanism exists for requesting that the U.S Census Bureau search for errors if local areas believe they have been undercounted. In the United Kingdom, census enumerations are less politically sensitive because they do not play a role in electoral districting, and also because local government districts are typically larger and less likely to be significantly affected by small errors, and head counts form a limited element of funding allocation formulae. (Needs-based elements of the formulae, however, are often seriously contested by local authorities, and more than 20 local authorities did query population figures after 2001, two of them persuading the Office for National

[2] For more information, see www.statistics.gov.uk/census2001/IntroLegislation.asp
[3] For more information, see www.boundarycommittee.org.uk; www.bcomm-scotland.gov.uk

Statistics to undertake in-depth local studies of the quality of census address lists [see, for example, National Statistics 2003]).

Increasingly, administrative sources and surveys can provide similar information to some census topics, at least at the national and regional levels. In both countries, other key data sources provide some similar data to the census. Examples of these sources are described in Table 2.

Table 2. Alternative Sources of Data on Topics Covered by the Censuses

	United States	United Kingdom
Population Numbers	U.S. Census Bureau's Intercensal Population Estimates Program Birth and Death Registration State Demographic Office Estimates	Office for National Statistics' Intercensal Estimates Electoral roll National Health Service Patient Register Pension records Birth and Death Registration Child Benefit Records Schools Census Armed Forces Numbers
Housing	U.S. Census Bureau's Housing Vacancy and Home Ownership Survey U.S. Census Bureau's Survey of Construction American Housing Survey	Council tax register Survey of English Housing English / Welsh / Scottish House Condition Surveys British Household Panel Survey Family Resources Survey Family Expenditure Survey
Employment	U.S. Census Bureau / Bureau of Labor Statistics Current Population Survey Bureau of Labor Statistics Current Employment Statistics Bureau of Labor Statistics Local Area Unemployment Statistics Bureau of Labor Statistics Occupational Employment Statistics	Data held by Inland Revenue Data held by Department of Work and Pensions and Employment Service Labour Force Survey Annual Business Inquiry British Household Panel Survey
Incomes (and expenditure)	U.S. Census Bureau / Bureau of Labor Statistics Current Population Survey U.S. Census Bureau Survey of Income and Program Participation U.S. Census Bureau / Bureau of Labor Statistics Consumer Expenditure Survey Federal Reserve Survey of Consumer Finances Internal Revenue Service data	Data held by Inland Revenue Data held by Department of Work and Pensions Family Expenditure Survey Family Resources Survey Survey of English Housing Labour Force Survey General Household Survey British Social Attitudes Survey British Household Panel Survey

Sources: www.census.gov; www.statistics.gov.uk/census2001; Thomas 1999a, 1999b, 1999c; National Statistics 2001b; National Statistics 2002b

Because of the cost of administering censuses and the availability of other sources for at least some of the same information, some countries in Scandinavia have stopped carrying out censuses. Germany even suspended a recent census.

However, censuses often provide unique information unavailable from other sources.

No other source, for example, provides total population counts for the nation, for spatial subgroups, and for a broad range of demographic and social groups. The census goal of a 100 percent sample, at least for the main questions, means that censuses can provide accurate information for small populations, including small spatial areas or small social groups. This makes censuses invaluable for research on urban processes and policy. Also making censuses more attractive than most sample surveys is their generally high accuracy and most well-understood problems. In addition, the range of demographic, social, and economic variables within censuses presents rich opportunities for research. Unlike administrative data sources, censuses were designed for research with care taken, for example, to maintain consistent topics and definitions over time. Data linking increasingly allows sample and administrative data to be used together, but census data usually play an important role in providing population denominators or other missing variables into linked and modeled data. Finally, census data are often more widely accessible than sample surveys, and data from the U.S. Census 2000 and the U.K. Census 2001 are now available on the internet.[4]

Although the U. K. government is energetically promoting the wider use of administrative data sources for research down to local level through its Neighbourhood Statistics initiative (Social Exclusion Unit 2000), a recent policy development group proposed doubling the frequency of the census, with an additional census in 2006, to provide more up-to-date and accurate total population counts as denominators in calculations with other data (Social Exclusion Unit 2001).

[4] See: www.census.gov and www.statistics.gov.uk/census2001

IV. How Were the Censuses Carried Out?

In the United States, the census is run by the U.S. Census Bureau, within the Department of Commerce. In the United Kingdom, as notes Table 1, the census is administered by three organizations: the Office for National Statistics in England and Wales, the General Register Office (GRO) in Scotland, and the Northern Ireland Statistics and Research Agency (NISRA). These bodies work closely together and use very similar methods, although there are some minor differences in questions and terminology used. However, for many topics, data are not collated by these organizations and are published separately for each of the three areas; therefore, researchers must do their own collation if they want information for the entire United Kingdom.

In both countries, planning for 2000 and 2001 censuses commenced in the early 1990s. Following international best practice, the latest censuses involved more user consultation than in prior censuses. They also included detailed surveys to develop and test individual questions and forms, and "rehearsal" surveys (see, for example, National Statistics 2002a). Table 3 outlines basic features of the administration of the two censuses.

Table 3. Basic Features of the U.S. Census 2000 and the U.K. Census 2001 Methods

	United States	United Kingdom
Census count day	Sunday April 1, 2000	Sunday, April 29, 2001
Initial identification of homes/house-holds	Address list from U. S. Postal Service;[a] advice from local government; also home visits in some areas	Visits in all areas[a] to confirm address list provided by Ordnance Survey
Delivery of forms	Mail, also by hand where visiting to update list (mostly rural areas)	By hand
Completion of forms	Self, on paper; also by internet; by interviewer in some areas where visits update list (very remote areas)	Self, on paper
Language assistance	Forms available in English, Spanish, Chinese, Tagolog, Vietnamese, and Korean; guides in 49 languages; telephone helpline	Forms available in English, also in Welsh (in Wales) and Gaelic (in Scotland), Irish and Ulster Scots (in Northern Ireland) and in a total of 26 languages including Arabic, Bengali, Urdu, Punjabi, Chinese, and Hindu (in England)
Main means of return	Mail; also hand collected where visiting to update list; internet	Mail[a](formerly all hand collected); also hand collected
Special procedures	Remote Alaska, trailer parks, marinas, campgrounds, homeless, institutions	Homeless, institutions
Non-response follow-up	Up to six visits to apparently occupied homes; then interview with alternative, for example, neighbor, building manager	Repeated visits to apparently occupied homes over about a week; then enumerator filled in basic information on age, sex, marital status where possible.[a] (No interviews with alternate, and data kept separate from standard returns)
Other follow up	Phone where returns inconsistent, incomplete, missing people, or homes have 6+ residents	
Final check	Visits to check unoccupied homes still had no residents	
Time from census day to last acceptance of return	6 months	3 months
Automated data coding	✓ (supplemented by hand)	✓ (supplemented by hand)
Edit and imputation	✓	✓
Adjustment of head counts on basis of post-census survey	For all purposes except reapportionment	Adjustment for all purposes[a] National population figure accurate to +/- 0.2 percent at 95 percent interval
Results checked against administrative data		✓ (data used were the sources for population numbers in Table 2)

[a] Innovation for 2000 or 2001

Sources: Prewitt 2000; Mann and Evans 1998; Simpson 2001; National Statistics 2001b; www.census.gov; www.statistics.gov.uk/census2001

In general, the two censuses employ similar methods, following international guidelines such as those produced by the UN and EU. The key differences in method are in the delivery of forms. The delivery of forms to households by hand, used in all cases in the United Kingdom, costs more but promotes higher response rates (U.S. Census Bureau 2002).

V. WHO WAS INCLUDED?

Both nations' censuses aim to count everyone "residing" in the country on census day. The U.S. census includes residents of the 50 states and the District of Columbia. Residents of Puerto Rico and the U.S. island areas, including Guam, American Samoa, the Northern Mariana Islands, and the U.S. Virgin Islands, took part in a parallel census with the results reported separately. In addition, the U.S. census counts federal employees, such as members of the military, and their dependents, living abroad or onboard ship on census day; they are allocated to a home state and included in apportionment calculations (Prewitt 2000). Other U.S. citizens living abroad on census day are not included in the census or apportionment counts (Mills 2001). The U.K. census includes all residents of the United Kingdom, which incorporates England, Wales, Scotland, and Northern Ireland. The Channel Islands and the Isle of Man are crown dependencies, not part of the United Kingdom. Their residents are subject to a parallel census, with the figures reported separately. There are also 13 U.K. overseas territories, including Gibraltar, Bermuda, and the Falkland Islands, which are not part of the United Kingdom and which did not take part in the census.

In both censuses, people were counted as living in a particular household if they "usually" lived there. In the United States, this was defined as the place in which the person spent the most nights in the preceding year. In the United Kingdom, it was defined more loosely as the place in which a person had lived or planned to live, not necessarily without interruptions, for at least six months (General Register Office 2003). If persons had no usual address under this definition, they were recorded at their location on census night. In a change from 1991, respondents to the U.K. census were asked not to record full details for temporary visitors to the household, or for university and college students and boarding school pupils, who were recorded in full at their usual address, which was the term-time address for students and pupils.

Both countries counted people residing in private households and those living in "group quarters" or "communal establishments" separately. In both censuses, individuals in group quarters or communal establishments received a similar form to that provided those in private households, but omitting the household questions. In addition, in the United Kingdom, communal establishments received a special form for each establishment, to be filled in by managers.

The definitions of these nonprivate household residences, covering places such as prisons, hospitals, and student dormitories, resemble each other in the two countries. The main area of difference was that in the United Kingdom, if a hotel formed the usual residence for at least one person, and was large enough to house more than 10 guests, it counted as a communal establishment (General Register Office 2003). Supported accommodation for people with special needs was only defined as communal establishment if fewer than one-half the residents had their own cooking facilities (General Register Office 2003).

In both censuses, homeless people (in the United Kingdom, people "sleeping rough") were counted and surveyed where possible, and included in the group quarters and communal establishment figures.

Of those recorded by the Census 2000, 97.2 percent were residents of private households, while in the United Kingdom for the 2001 Census, 98.2 percent were residents of private households, rather than communal establishments.

VI. WHAT DID THE CENSUSES ASK?

Both censuses follow international guidelines on topic coverage, and both are quite similar in the topics and questions explored. However, some differences arise in the number and variety of topics and in the questions and terminology employed.

The U.S. census involves a household form, an individual form for residents of group quarters, a shipboard form, a military form, and separate forms for Puerto Rico and the U.S. island areas.

The U.S. definition of a household applies to all the people who occupy a housing unit as their usual place of residence. The U.K. definition is one person living alone, or a group of people who live together and share a living room or at least one meal a day. This allows the possibility that a single housing unit may have more than one household within it. In U.K. census terminology, the space occupied by a household, which may be only part of a housing unit, is known as a dwelling unit.

Since 1940, only a sample of the U.S. population has been asked to complete the more onerous "long" household and individual forms. In 2000, the long form was sent to a 17 percent sample of households, with higher sampling rates in smaller areas to maintain confidence intervals (U.S. Census Bureau 2002). It asked 50 questions: 19 for the household, and 31 for each individual.[5] The Census 2000 "short" form, which was sent to 83 percent of households, asked eight questions: two for households and six for each individual.[6]

The U.K. census involves a household form and a communal establishments form. Slight differences in the forms arise as a byproduct of three census organizations in the four countries of the United Kingdom, which are discussed below.

Prior to 2001, U.K. censuses also used a sampling approach, with a 10 percent sample receiving a form coded for open-ended questions, including those on qualifications, occupation, and industry of employment. This canvass was conducted in the same spirit as the U.S. long form. However, in 2001, that special sample form was discontinued and, instead, all households received the same form containing all questions.[7] The Census 2001 asked 38 questions (37 in England); 12 for the household, and 26 for each individual (25 in England), placing it midway between the U.S. long and short forms in terms of number of questions. Table 4 details the main questions asked in the forms provided to households.

[5] For sample forms, see www.census.gov/dmd/www/pdf/d02p.pdf
[6] For a sample, see www.census.gov/dmd/www/pdf/d61a.pdf
[7] For a sample of the household form for England, see www.statistics.gov.uk/census2001/pdfs/H1.pdf

Table 4. Topics Covered in the U.S. Census 2000 and the U.K. Census 2001

	U. S. Census 2000 (household form)[a]	U.K. Census 2001 (household form)
Households	Number of residents	(Not asked explicitly but calculable from other data)
	Tenure	Tenure
	Type of accommodation (house/apartment/size of building; age; number of rooms, plumbing, kitchen, telephone, fuel)	Type of accommodation (house/flat; stories, number of rooms, heating, bathing, self-contained)
	Length of residence in home	-
	Car or light trucks ownership	Car or van ownership or access
	Home site (non-housing uses, site size, farm produce)	-
	Housing costs (utilities, rent/mortgage, taxes, insurance, value)	-
Individual/s	Name	Name
	Phone number (first person in household only; one of any owners or renters of the home)	-
	Sex	Sex
	Age	(Not asked explicitly but calculable from other data)
	Date of birth	Date of birth
	Race	Ethnicity
	Relation to first person in household	Relation to all others in household (for up to five household members)
	Marital status (and number and date of previous marriages)	Marital status
	School or college attendance (in last month, private/public, grade)	School or college attendance
	Education (highest grade achieved)	Education (possession of school qualifications, degree, professional or vocational qualification)
	Ethnic origin (Hispanic or Latino/not Hispanic or Latino)	-
	Ancestry	-
	Language (at home, English competence)	Language (competence in national languages) in Scotland, Wales, and Northern Ireland only
	Place of birth (state, country)	Place of birth (town, country)
	U.S. citizenship	-
	Date of arrival in country	-
	Address five years ago	Address one year ago
	Physical disability, incapacity	Presence of limiting long-term illness, health[b]
	Grandchildren (cohabitation, responsibility, length)[b]	Giving help to others[b]
	Active military service (date, length)	-
	Economic status (work last week, hours)	Economic status (work last week, work search, availability, work experience)
	Work (location)	Work (location, title, role, industry)
	Transport to work (method, sharing, time, length)	Transport to work (method)
	When last worked	-
	Employer (name, type)	Employer (name, type, size)
	Income	-
	Work last year (length, hours, income, sources)	-
	-	Religion[b]

[a] Shaded questions are asked of the long form sample only [b] Innovation for 2000 or 2001

Sources: 2000 census forms for the United States can be viewed at: www.census.gov. dmd/www/pdf/d61a.pdf (short form), www.census.gov.dmd/www/pdf/d02p.pdf (long form). 2001 household census forms for England can be viewed at www.statistics.gov.uk/census2001/pdfs/H1.pdf

There were slight differences in the questions and wording between census forms in England, Wales, Scotland, and Northern Ireland in 2001, reflecting different policy concerns, history, legal, and administrative systems and terminology.

In each country, the list of answer categories for questions on country of origin, titled "ethnic group" began with that country. Each country used slightly different terms for communal establishments. Categories on education and qualifications reflected those in the different education systems of England and Wales, Scotland, and Northern Ireland (National Statistics 2001a). Outside England, a question covered the respondents' ability to understand, speak, and write Welsh, Gaelic, and Irish in the relevant countries. In England and Wales, an additional question asked specifically about teaching, medical, nursing, and dental qualifications (National Statistics 2001a). In Wales, householders had the option of filling in a form in English or Welsh. In Scotland, options distinguished between furnished or unfurnished rented housing; two questions covered religion of upbringing and current religion; and the question on travel destination and method included all individuals, not just adults, and involved travel to study as well as work (National Statistics 2001a). In Northern Ireland, two questions covered the religion of upbringing and current religion; an additional question asked about the number of floors in the household's building; but no question inquired about professional qualifications (National Statistics 2001a).

A. Key Differences in Topics Covered by the U.S. Census 2000 and the U.K. Census 2001

The U.S. long form asks about more topics and has more questions than the U.K.'s single form. Topics covered by the Census 2000 but not the Census 2001 include income, home site, housing costs, ancestry (in addition to own ethnicity), citizenship, date of arrival if born abroad, details of military service, and work last year as well as current work (Table 4). The U.K. census covers religion and health, which the United States does not explore.

No U.K. census has ever included a question on income because of the belief that it would be seen as intrusive and would affect response. The U.K.'s 1997 census test included a trial income question, and it did indeed provoke negative reactions, and was thought to be associated with a statistically significant 2.8 percent drop in response, which rose to 10 percent in inner-city areas (National Statistics 2002a). The lack of a question on income has made it difficult to use the U.K. census to research income poverty directly. Census researchers have often used proxies that are associated with income, such as employment, access to a car or van, and housing tenure (Green 1994). These measures are not perfect correlates of income, and work differently in urban and rural areas and between regions. In addition, as both car and home ownership rise, they may become increasingly problematic, and disrupt analysis over time. Some researchers have used ownership of two or more cars as a measure of wealth. Market researchers and other private companies have used complex sets of proxies to model income data for small areas from census data and other sources (CACI 1999). Recently, administrative data sources have become more widely available, such as claimant records for such benefits as housing, income support, and job seekers' allowance;

benefits that are contingent on or indicative of low income and that can be linked to small areas using postal codes (Tunstall and Lupton 2003). These data, however, are also problematic because of varying participation in such benefits. It is worth noting that the United Kingdom has a greater interest than the United States in broad concepts of "deprivation" and "social exclusion" in addition to income poverty. The Index of Multiple Deprivation, produced by the Office of the Deputy Prime Minister in 2000, uses a range of topics and measures, with only a minority covering income derived from the census.

An optional question on religion had been used in the Northern Ireland census since 1861 (Macourt 1995) to monitor the location and condition of people of different religious backgrounds. Following consultation, the question was extended to the entire United Kingdom in 2001, which required new legislation. Prior to this, the Census Act of 1920 had prohibited this topic in the interest of privacy. In 2001, the religion question had a response rate similar to the average for all questions (Simpson 2001). The options were: "no religion, Christian, Buddhist, Hindu, Jewish, Muslim, Sikh, and other (write in)."

The U.S. census asks about disability, while the U. K. census asks about limiting long-term illness and about the permanently sick and disabled among those aged 16–74. For Census 2001, a question was added asking whether the respondent's health had been "on the whole good, fairly good, or not good" during the last year.

For Census 2000, a new question was added on grandparents living with and caring for grandchildren. For Census 2001, a question was added on unpaid care and support provided by any household member to any elderly, ill, or disabled people.

The U.S. census asks about languages spoken at home other than English, and about English ability. Within the United Kingdom, the census in England did not ask about language, but there were specific questions about Scots-Gaelic ability in Scotland, Welsh ability in Wales, and Irish ability in Northern Ireland.

B. Key Differences in Terminology and Categories Used by the Census 2000 and Census 2001

Even where the two censuses cover the same topic, the terms and answer options sometimes differ. Therefore, the two sources may not provide the same information on the same topics, and the information may not be easily compared between the two countries. This section discusses the differences

1. Housing

U.S. and U.K. ownership options are similar. The U.S. term “owned free and clear” and “owned with a mortgage” are equivalent to the U.K. terms “owned outright” and “buying with a mortgage,” respectively. The United Kingdom also offers an option of “part own, part rent” (usually known as “shared ownership”), which has no direct equivalent in the United States.

A further U.K. question covers the identity of the landlord. In England and Wales, the options are “council (local authority); housing association, housing co-operative, charitable trust, registered social landlord; private landlord, letting agency; employer of a household member, relative or friend; or other,” while in Scotland and Northern Ireland, the terms differed slightly (the addition of Scottish homes alongside “council” and the replacement of “council” by Northern Ireland Housing Executive, respectively). Many of these types of landlords have no direct equivalent in the United States.

The U.S. census has 10 options to describe the built form of the home, while the United Kingdom has seven. The U.S. options distinguish between apartments according to the number of homes in the building, with six categories for building size. The U.K. options distinguish between semi-detached and terraced homes, and between purpose-built flats, flats in converted houses, and flats in commercial buildings. The U.S. category “one home unit, detached” is equivalent to the U.K. category “house, detached.” The U.S. category “one home unit, attached” is equivalent to the U.K. categories “house, semi-detached” combined with “house, terraced.” In combination, the U.S. terms “2 home unit” and “3 or 4 home unit” are roughly comparable to the U.K. combination “maisonettes” and “flats in converted houses” and “blocks of flats.” The U.S. terms “5–9 home unit” and “10 or more home unit” are roughly comparable to the U.K. term “blocks of flats.” Finally, the U.S. options distinguish between mobile homes and recreational vehicles or boats, while U.K. options combine “mobile and temporary” structures.

The details of what counts as a room are very similar. Both censuses exclude bathrooms and halls from the count. The United States also explicitly excludes porches, balconies, foyers, and half-rooms, and the United Kingdom excludes toilets, landings, storage rooms, and rooms shared with another household. The U.S. census also asks about bedrooms specifically.

The U.S. census asks whether homes have complete kitchen, bathroom and toilet facilities, and also asks about the availability of hot water in bathrooms, piped water in kitchen, and refrigerators and stoves. The U.K. census asks whether homes are “self-contained,” that is, whether the household shares any rooms, including kitchen, bath or shower, and toilet, and does not ask how the rooms are equipped. The U.S. census asks about the type of heating power used, while the United Kingdom census asks about the presence of central heating.

The U.S. census has more questions on the home than the U.K. census. It also asks about the age of the home, date when the main respondent moved in, telephones in the home, cost of utilities, rent or mortgage, property taxes, insurance, and home value. Respondents in U.S. single-family homes are asked an additional set of questions about the home site, including its size,

nonhousing uses, and value of any farm produce. In the United Kingdom, many of these topics are covered in other, regular surveys (Table 2).

2. Race and Ethnicity

The two censuses have significant differences in terminology of race and ethnicity—even in the topic title—reflecting different populations in the two countries, different policy concerns, and different approaches to race and ethnic identity (see Table 5 for a review of these distinctions). In the United States, the term "race" has ongoing currency; in the United Kingdom, the term lost usage in the 1980s in favor of "ethnic group." The U.S. census treats race and Hispanic origin as two separate issues. It asks about both, and also asks about ancestry (Grieco and Cassidy 2001).

Although the U.S. census has asked about race since 1790, the census in England, Wales, and Scotland included a question on ethnicity for the first time in 1991, and in Northern Ireland for the first time in 2001. Before that, U.K. censuses included data on country of birth, and birth outside United Kingdom or in the New Commonwealth was used as a proxy for minority ethnicity. Question tests for 2001 found that people were willing to answer ethnicity questions, and that such questions had higher response rates than the average for individual questions (National Statistics 2002a).

Table 5. Race and Ethnic Group Options in the U.S. Census 2000 and the U.K. Census 2001

	U.S. Census 2000	U.K. Census 2001
Birthplace	✓	✓
Citizenship	✓	–
Ancestry	✓	–
Ethnicity/ Ethnic group	Not Hispanic/Latino/Spanish Hispanic/Latino/Spanish: - Mexican American, Mexican, Chicano - Puerto Rican - Cuban - Other Hispanic/Latino/Spanish.	White – British – Irish – other (write in). Mixed – White and Black Caribbean – White and Black African – White and Asian – other (write in) Asian or Asian British – Indian – Pakistani – Bangladeshi – other (write in) Black or Black British – Caribbean – African – other (write in) Chinese Other (write in) “Irish Traveller” (Northern Ireland only)
Race	White Black, African American, Negro American Indian or Alaskan native (write in name of enrolled or principal tribe) Asian Indian Chinese Filipino Japanese Korean Vietnamese Other Asian (write in) Native Hawaiian Guamanian or Chamorro Samoan Other Pacific Islander (write in) Some other race (write in)	

Both censuses accommodated people of mixed race for the first time in 2000 and 2001. The U.S. census allowed respondents to check more than one category, while the United Kingdom added a “mixed” ethnic group. Following nationalist party and public concern that the question on ethnic group did not include a “Welsh” option, the Office for National Statistics now recommends a Welsh category in future surveys.

The suffix “British” does not refer explicitly to citizenship or place of birth, but in practice is likely to be used in this way. People terming themselves “Filipino,” “Japanese,” “Korean,” “Vietnamese,” and “Other Asian” on the U.S. census might use the “Asian-Other” category in the U.K. census. People terming themselves “Hispanic/Latino/Spanish” on the U.S. census might use the “White—other” category in the U.K. census. Pacific islanders might be likely to select the “Asian—other” or “Other—other” categories in the U.K. census, which tend to attract very diverse respondents.

Table 6 lists categories that are not strictly equivalent but that are roughly comparable.

Table 6. Comparable Categories for Race and Ethnicity in the U.S. Census 2000 and U.K. Census 2001

U.S. Census 2000	U.K. Census 2001
Race	Ethnicity
White (non-Hispanic)	White
Black or African American	Black or Black British
Asian	Asian or Asian British + Chinese
Asian Indian	Asian or Asian British-Indian
Filipino + Japanese + Korean + Vietnamese + Other Asian	Asian-Other
Hispanic/Latino/Spanish	White-Other
More than one race	Mixed – White and Black Caribbean – White and Black African – White and Asian – Other (write in)

Source: www.census.gov/dmd/www/pdf/d02p.pdf; www.statistics.gov.uk/census2001

The U.S. census distinguishes between “native-born” and “foreign-born” residents. Neither is a literal term relating to place of birth. “Native born” includes those born in the United States, plus two other groups: those born in “outlying areas” of the United States, such as Puerto Rico and Guam, and those who were born elsewhere but who have at least one parent who is a U.S. citizen. The foreign born include the remainder (Gibson and Lennon 1999).

3. Family Relationships and Marital Status

The U.S. census asked about the relationship between one individual in the household, who should be among any owners or legal tenants, and up to five of the other people in the household. The U.K. census had asked about the relationship between the “household head” and others, but from 2001, to gain a fuller picture of relationships in the household, the census asked people asked about the relationship of all of the first five members of the household to one another, and the relationship of any sixth or subsequent members to the first two.

The U.S. census distinguishes between natural-born and adopted children. The U.K. census covers stepparent and stepchild relationships, and allows in-law relationships to be derived. Notably, the U.S. census includes "unmarried partner" towards the end of the list and among the "unrelated" section options, while the U.K. census places the "partner" option directly after "husband or wife." Prior to 2001, unmarried partners were imputed. The U.S. census has additional categories for roomers (lodgers), housemates, and foster children, as well as the section on grandparents living with grandchildren.

Both censuses include categories for the never married, divorced, and widowed. The U.S. census had one "married" category and one category for those who were married but are now "separated," while the U.K. census distinguishes between first marriages and subsequent ones, and added a new category of "separated but still legally married" in 2001.

4. Disability

The U.S. census asks about sense and mobility disabilities and about difficulties in learning, personal care, independent mobility, and working. The U.K. census asks more broadly about the presence of "long-term illness, health problems, or disability which limit daily activities or work." Those who answered yes to any one of the U.S. categories would be likely to answer yes to the U.K. question. The U.K. census also asks of those who did not work the prior week whether they were "permanently sick/disabled."

5. Education

Options differ based on the different educational systems in the two countries. The U.S. options concentrate on the number of years of education. In the United States, education is compulsory for 7- to 15-year-olds . In the United Kingdom, education is compulsory for 5- to 16-year-olds. The U.K. census options focus on numbers of qualifications or exam passes obtained at different levels, most of which can be roughly translated into years of education. However, it is possible to attend school or college until and beyond the legal minimum period without obtaining any qualifications. To progress to the next set of exams, a student must typically pass five or more exams at age 16 ("O levels" and "CSEs" until 1988, "GSCEs" since then). The second set of exams is usually taken by 18-year-olds. These are called A levels or AS levels. To advance to university study, students must pass two or more exams at the A level. The U.K. qualifications include a range of vocational qualifications, or NVQs, taken from age 16 onward, some of which might be equivalent to the U.S. category "some college" and "college, no degree" as well as specific professional qualifications. Table 7 details the educational achievement options on the two forms, by the usual age or number of years of study required.

Table 7. Educational Achievement Categories in the U.S. Census 2000 and U.K. Census 2001

U.S. Census 2000	Usual Age	U.K. Census 2001 (England and Wales)[a]	Usual Age/No, of Years of Study
No schooling	-	-	-
-	-	No qualifications	0–13 years' study
Nursery to grade 4	3- to 10-years-old	-	-
Grades 5–6	11- to 12-years-old	-	-
Grades 7–8	13- to 14-years-old	-	-
Grade 9	15-years-old	-	-
Grade 10	16-years-old	1+ O' levels/CSEs/GSCEs (any grade); 5+ O' levels/CSEs grade 1/GSCEs (grades A-C)	16-years-old
Grade 11	17-years-old		
Grade 12, no high school diploma	18-years-old		
High school graduate or equivalent (for example, GED)	18-years-old	1+ A' levels/AS levels, 2+ A' levels/AS levels	18-years-old
Some college credit, less than one year	19-years-old or older		
One or more years of college but no degree	19-years-old or older		
Associate degree (AA, AS)	20-years-old or older	-	-
-	-	NVQ 1	16-years-old and older
-	-	NVQ 2, intermediate GNVQ	16-years–old and older
-	-	NVQ 3, advanced GNVQ	18-years-old and older
-	-	NVQ 4-5, HNC, HND	18-years-old and older
Bachelor's degree (BA, AB, BS)	22-years-old or older	First degree (BA, BSC)	21-years-old and older (A'levels + 3–4 years' study)
Master's degree (MA, MS, Meng, MSW, MBA)	24-years-old or older	Higher degree (MA, PhD, PGCE, postgraduate certificates, and diplomas)	22-years-old (degree + 1–3 years' study)
Doctorate (PhD, EdD)	28-years-old or older		
Professional degree (MD, DDS, DDM, LLM, JD)	24-years-old or older	Qualified teacher	21-years-old or older
		Qualified medical doctor	25-years-old or older
		Qualified dentist	25-years-old or older
		Qualified nurse, midwife, health visitor	21-years-old or older
		Other	-

[a] There are also some differences between the between the English and Welsh, Scottish, and Northern Irish educational systems and terminology.

6. Employment

The U.S. census asks if respondents were working "for pay or profit" last week. The U.K. census asks, considerably less concisely, about working as an employee, on a government training scheme, as a self-employed or freelance worker, in own or family business, or away temporarily from any of these if ill, on maternity leave, and on temporary layoff last week. Both censuses ask about work even if only one hour a week. Both include family and self-employment even if there was

no pay or profit. The significant difference is that the U.S. category excludes those temporarily ill or on leave, any government training schemes, and temporary layoffs while the U.K. census includes them. The U.K. census is not explicit about how those not working owing to labor dispute should answer.

Both ask about the form of employment, whether an employee or self-employed, but the U.S. census offers eight categories, including employees of for-profit; not-for-profit; federal, state and local government; and unpaid work in a family business. It distinguishes between self-employment in incorporated and unincorporated businesses, while the U.K. census makes a distinction between self-employment with and without employees, which in practice is closely related to incorporation; most small businesses in the United Kingdom take on "limited company" status when they employ more than one person. Both ask about the title, activities, and location of main job, the main activity, and name of the employer. The U.S. census 2000 asks respondents to classify the employer as manufacturing, wholesale, retail, or other. The U.K. census also asks about supervisory responsibility of the job, and number of employees of the employer.

Both censuses ask those who are not working if they had looked for work in the past four weeks. The U.S. census asks whether people were able to start work immediately, while the U.K. census asks whether they were available to start within two weeks. The U.S. census asks those unable to start immediately if this was because of one's "own illness" or other reasons—for example, being "in school." The U.K. census asks those not working if they are retired, a student, looking after the home or family, permanently sick or disabled, or none of these.

The U.S. census also asks about any work during the last year, and weeks and usual hours worked. The U.K. census asks about the average hours worked in the last four weeks. Both censuses ask those not working when they last worked.

7. Transport

The U.S. census asks about cars and trucks owned by the household. The U.K. census includes cars and vans "available for use" by the household as well as owned by it. The definition thus includes company cars and other cars that households uses but does not own.

Both censuses ask about transport to work for those employed. The U.S. census asks respondents to specify the means used to travel to work last week, and the U.K. census asks about the "usual" means. In Scotland, this question includes those in school or college. The U.S. census offers 12 options, and the U.K. census includes 11. The U.S. options distinguish between a "streetcar or trolley" and "subway or elevated," while the U.K. census combines them. The U.K. options distinguish between driving a "car or van" and being a passenger. The U.S. census includes the categories "going in a car or truck" and "car pool," which in combination are comparable although not equivalent to the U.K. options "driving a car or van" and "being a passenger." It is possible that some people who rode in a vehicle with five or more seats would term this a "truck," a private vehicle category in the U.S. questionnaire, but a "minibus," a bus category in the U.K. census. The U.S.

census asks how many other people were in the car, truck, or van, and about departure and journey times.

VII. WHO ANSWERED THE CENSUSES?

In both countries, completing the census form is required by law, with the exception of the U.K. question on religion. However, censuses never manage full enumeration (Simpson and Middleton 1997). In recent decades, census response rates have fallen across the world, perhaps owing to less compliant attitudes, more single-person households, and more mobility, which reduces the accuracy of initial address lists and makes it harder for enumerators to reach residents (Mann and Evans 1998). Both U.S. and U.K. censuses attempted to maintain response rates of previous censuses, and added staff in inner-city areas, more translators, and publicity in the United Kingdom.

Census 2000 bucked international trends to increase the initial response rate from the 65 percent of 1990 to 67 percent of homes approached, including responses that were mailed, phoned in, or emailed (see Table 3 for a review of methods used to contact respondents). After home visits by enumerators, which identified vacant homes to exclude (vacant homes accounted for 9.9 percent of all homes identified), the response rate increased significantly. The post-census survey found an overcount of 0.5 percent, while checks using demographic and administrative data suggested a small undercount (Clark and Moul 2003). These are average rates across all types of forms. The U.S. Census Bureau estimated in 1990 that the response rate for the long forms was 4.5 percent lower than for the short forms, and this has led the Census Bureau to consider abolishing the long form for the 2010 census. In the United Kingdom, where all addresses are checked by an enumerator for validity and all households receive a personal visit, the response rate (after initial and follow-up visits) was much higher, at 94 percent of households, although this represented a drop from 96 percent of households in 1991.

Both censuses used evidence from enumerators and, in the United States, other potential interviewees, to gather information on individuals and households that enumerators believed were present but who had been missed in initial responses. In both countries, this information brought the response rate to 98 percent—a rate quite similar to the final response rates for 1990 and 1991 (Simpson and Middleton 1997).

Both countries carried out a survey to assess rates and patterns of nonresponse and to discover which types of individuals, households, group homes, or communal establishments had not responded. Results were also compared to other sources of information on population numbers (for the alternative sources of data used, see Table 2).

Both surveys showed that some areas and social groups had much lower response rates. In the United States, response rates were lower in southern and rural states. Studies since the 1940s have found that response rates are lower than average for black and Hispanic residents and American Indians living on reservations, and evidence from 1990 finds lower response for children and renters (Prewitt 2000) and men (Clark and Moul 2003). The U.K. survey showed that in inner-city London, only 78 percent of residents were recorded by the census count, and in London as a whole, only 85 percent were recorded. Other urban local authorities also had below-average

response rates. In addition, only 87 percent of men aged 20–24 were recorded, responses from young women were dramatically lower than in 1991, and responses were also low for children. In addition, living in a rental unit has been linked to nonresponse in both the United States and United Kingdom (Simpson and Middleton 1997).

The published figures from the Census 2001 are count figures adjusted to include records made by enumerators and for remaining nonresponse. Published figures from the Census 2000 in the United States and censuses for 1991 and all earlier years in the United Kingdom are count figures plus records made by enumerators only (Simpson and Dorling 1994).

VIII. How Was the Information Processed?

Both census used automatic form reading where possible, supplemented by staff work to interpret handwriting and code answers to open response questions.

A. "Edit" Processes: Adjusting for Incorrect and Missing Responses to Individual Questions

Both censuses employed "edit" processes—statistical methods to identify and adjust for apparently incorrect or missing responses to individual questions. National census administrators use a range of methods, but both the Census 2000 and Census 2001 used real records from other parts of the form, or from returns made by other similar individuals or households to compensate for nonresponse, and to create estimated answers.

B. "Imputation": Adjusting for Nonresponse by Individuals and Households

Both censuses used "imputation" processes—statistical methods to identify and adjust for nonresponse for entire individuals or households that other evidence shows should exist. Again, both used real records to do this.

The U.S. Census Bureau had originally intended to use these techniques to produce a "one number" census, that is, a single published number based on statistical modeling rather than the current two sets of tallies: separate census counts and population estimates (Clark and Moul 2003). However, very late in census planning, the Supreme Court ruled in 1999 that state population counts used for reapportioning state representatives to Congress should be derived from the enumeration itself and not from statistical estimations (Prewitt 2000). Statistical techniques were still used to generate population figures for redistricting other political units and for allocating federal funds (Prewitt 2000).

In the United Kingdom, the post-census survey in 2001 was the first that was carried out independent of the census. That is, it was the first that could be used to provide quality estimates of population totals. For example, statistical models were applied for the inner-city London residents believed to have been missed by the census and added to figures for London. Survey and census results were also checked against administrative figures of births, deaths, migration, and medical enrollment (Prewitt 2000, Table 2). This enabled the first "one number" census in the United Kingdom. Estimates of the size and characteristics of the entire population, rather than just those the census reached, could be created, with a known confidence interval.

IX. THE PRESENTATION OF RESULTS

Subtle, but sometimes significant, differences exist in some of the key categories and units used in presenting results of the two censuses. All the definitions noted below are from the U.K.'s National Statistics (2003) or from the U.S. Census Bureau glossary (www.census.gov).

A. Demographic Units

U.S. analysts use the term "householder"—the person, or one of the people, in whose name the home is owned, being bought, or rented. (Differences in definitions of individual households and private households are available in Section V above.) If no such person is present, any household member aged 15 or older can serve as the householder for the purposes of the census. Census 2001 replaced the term "head of household" with "household reference person." The household reference person is the individual who is the sole resident of the household; or where there is a family, the lone parent; or where there is a married or cohabiting couple, the one who is the most economically active, the eldest, or the first on the form. The term is less significant in the U.K. census because data are collected on relationships among all of the first five household members, not just between the householder and other residents.

Both the United Sates and United Kingdom use definitions of families to distinguish family from nonfamily households, and to determine whether all or only some of the individuals in a multi-person household are members of a family. If a household contains at least one family, it is termed a "family household."

The U.S. Census Bureau definition of a family is a group of two or more people who reside together and who are related by birth, marriage, or adoption. This excludes unmarried, cohabiting couples, unless they have resident children. Instead, two people living together who are unmarried or who are in a "common law marriage" (a legal recognition of cohabitation or other marriage-like behavior that exists in various forms in 15 states) are known as an "unmarried partner household." The term "couple households" is used to include both married couple and unmarried partner households.

The UK census defined a family as "a group of people consisting of a married or cohabiting couple with or without child(ren), or a lone parent with child(ren)." This obviously includes cohabitors, who will be recorded as cohabiting, unmarried even if one or both are married to other people. It also includes a married or cohabiting couple and their grandchild(ren) or a lone grandparent and their grandchild(ren), where there are no children in the intervening generation in the household. Cohabiting couples can include same-sex couples. However, this definition excludes some birth or marriage relationships, such as siblings and in-laws, which are included in the U.S. definition. Table 8 compares the relationships identified as families in the two censuses.

Table 8. Household Groups Defined as "Families" in the U.S. Census 2000 and U.K. Census 2001

	U.S. Census 2000	U.K. Census 2001
Married couple	✓	✓
Married couple with child/ren (of one or both of the couple, any age)	✓	✓
Cohabiting couple	✓[a]	✓
Cohabiting couple with child/ren (of one or both of the couple, any age)	✓	✓
Cohabiting couple (same sex)		✓
Cohabiting couple (same sex) with child/ren (of one or both of the couple, any age)		✓
Lone parent with child/ren (any age)		✓
Married couple or lone adult with grandchild/ren but without child/ren	✓	✓
Cohabiting couple with grandchild/ren but without child/ren		✓
Siblings	✓	
People linked by in-law relationships only; for example parent/child's spouse	✓	

[a] If a "common law" marriage. Otherwise, not a "family" but an unmarried partner household

Both countries' definitions of family refer to children of any age, who can be related to one or more of the older generation in the household not only by birth but also through adoption or step-relationships. In other areas of analysis, the U.S. Census Bureau defines children as people under 18 years old. The U.K. census uses as a comparable term, "dependent children," which covers youth under age 16 living in households, and also youth under age 18 who are full-time students and living with one or more parents.

The parameters of who is of working age also differ between the two countries, leading to different population bases in economic activity data. In the United States, all people age 16 or older are defined as working age, while in the United Kingdom, working age includes 16- to 74-year-olds. People outside these age groups are not asked about employment status.

Housing is another area of difference. In the United States, a housing unit is a house, an apartment, a mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters, or if vacant, intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants live separately from any other individuals in the building but have direct access to the unit from outside the building or through a common hall. Housing units cannot be shared by more than one family. The U.K. term "dwelling" is a similar to a housing unit, but a dwelling can be shared. A shared dwelling is part of a converted or shared house, not all the rooms are behind a door that only the household can use, and there can be or are other households in the dwelling.

B. Spatial Units

In both the United States and United Kingdom, most census data are collected and collated by spatial areas, including well known legal-political and administrative areas, and statistical areas specially defined for census and other statistical uses. Tables 9 and 10 summarize this information, by the purpose of the areas and their scale.

Table 9. Political Spatial Units in the U.S. Census 2000 and the U.K. Census 2001

	U.S. Census 2000	U.K. Census 2001
National	435 congressional districts	659 Westminster constituencies (for U.K. parliament) 40 Welsh Assembly constituencies 73 Scottish Parliamentary constituencies 18 Northern Ireland Assembly constituencies (elected by first-past-the-post) 5 Welsh Assembly regional constituencies (with 20 MWAs) 8 Scottish Assembly regional constituencies (with 56 MSPs)
Subnational	50 states State legislative districts[a]	- -
Local	3,141 counties (and equivalents in Alaska and Louisiana) Incorporated places (cities, towns, boroughs, villages, municipalities) Minor civil divisions (part of a county for electoral or administrative purposes in 28 states) Voting districts (election districts, precincts, wards) -	34 second-order (second tier) local government units called county councils; 376 first-order (first tier) and unitary local government units, including 239 district councils, 33 London boroughs, and 47 unitary authorities (England), 22 unitary authorities (Wales), 32 council areas (Scotland), and 26 local government districts (Northern Ireland) 10,679 electoral wards ("divisions" in Wales) (parts of first-order and unitary local government units for electoral purposes) 12,615 parishes ('communities' in Scotland and Wales) (do not cover all of England or any of Northern Ireland and are not all active)

[a] Innovation for 2000/01

Sources: U.S. Census Bureau 2002; GRO 2003; NISRA 2003; www.gro-scotland.gov.uk/grosweb/grosweb.nsf/pages/censushm; www.lga.gov.uk; www.wales.gov.uk; www.parliament.uk/faq

Note. MSP = Members of the Scottish Parliament; MWA = Members of the Welsh Assembly

Table 10. Administrative Spatial Units in the U.S. Census 2000 and the U.K. Census 2001

Health	—	28 strategic health authorities composed of 303 primary care trusts (England), 22 health boards (Wales), 15 health boards (Scotland), and 4 health and social services boards (Northern Ireland)
Postal	ZIP codes (5 digits) ZIP+4 codes (5 + 4 digits)	124 postal areas (2 letters) 2,933 postal districts (2 letters + one digit) 9,737 postal sectors (2 letters + 2 digits) 1.7m postcodes (2 letters + 2 digits + 2 letters)
Other		Four education and library boards (Northern Ireland only) 10 regions (7 regions in England, Scotland, Wales and Northern Ireland are each treated as one region)
	Four regions, each composing 1–3 of nine divisions	
	463 urbanized areas	493 settlement areas, created of contiguous urban postcodes, comprising smaller localities (Scotland only)
	281 metropolitan statistical areas	—
	Census designated places (places that are not incorporated)	—
	Census subdivisions (parts of counties in the 21 states that do not have minor Civil Divisions)	Super output areas (clusters of output areas, to be finalized spring 2004)
	66,304 census tracts (parts of counties)	—
	33,233 five-digit Zip Code Tabulation areas (proxies for ZIPS)	—
	8,000,000 blocks	175,434 output areas
	Labor market areas, commuting areas	297 travel to work areas

Sources: U.S. Census Bureau 2002; GRO 2003; NISRA 2003; www.gro-scotland.gov.uk/grosweb/grosweb.nsf/pages/censushm; www.lga.gov.uk; www.wales.gov.uk; www.parliament.uk/faq.

The United States encompasses other territory types not listed in Tables 9 or 10, including Indian tribal areas and Hawaiian homelands. In the United Kingdom, in addition to the 659 Westminster parliamentary constituencies, Scotland and Wales also have constituencies for Members of the Scottish Parliament (MSPs) and Members of the Welsh Assembly (MWAs). In each case, the constituency includes two types: 1) smaller areas for which single representatives are elected through first-past-the post ballots, and 2) larger regional constituencies that are used to elect MSPs/MWAs from lists through proportional representation. In Northern Ireland, Westminster and Assembly constituencies share the same boundaries.

Both the United States and the United Kingdom have complex local government systems, which have evolved over time and show local variation in terminology and structure. Until recently,

both countries had a two-tiered local government system. First-tier were counties in both the United States and England, which provided more strategic services to a larger area. The second tier was incorporated places such as cities, towns, and villages in the United States, and district councils in England. The second-tier entitites provided a wide range of services. However, the tiers have recently been combined in Wales, Scotland, and Northern Ireland. In addition, English authorities have become unitary, and London borough councils have been acting as unitary authorities since 1985. The National Health Service administrative areas are also undergoing change.

United Kingdom postal codes are areas used by the post office for mail delivery. They are five- to seven-figure combinations of numbers and letters, for example, OX2 6HS (a location in Oxford). Each six-figure postal code designates about 20 households. *Postal sectors* are groups of postal codes sharing the first four figures of the alphanumeric; for example, OX2 6. *Postal districts* share the first three; for example, OX2, and *postal areas* share the first two. Postal codes do not fit perfectly within local authority or ward boundaries, and census administrators have formed artificial sectors to provide the best fit possible, mostly from contiguous output areas. Output areas are units defined by the census to be used as the building blocks for other areas.[8]

The next section considers the comparability of U.S. and U.K. areas, taking into account population size and spatial area. Table 11 lists spatial areas in order of average population size.

[8] For more information, see www.gro-scotland.gov.uk/grosweb/grosweb.nsf/pages/censushm

Table 11. Main Spatial Units in the U.S. Census 2000 and the U.K. Census 2001 by Mean Population Size

U.S. Census 2000		U.K. Census 2001	
Name of area	Average population	Name of area	Average population
Census regions	70,355,000[a]	Regions	5,879,000[a]
Census divisions	31,269,000[a]	Counties[c]	1,228,000[a]
States	5,628,000[a]	Postal area (2 letters)	1,137,600[b]
Congressional districts	647,000	First order/unitary local authority	161,000[a]
Counties		Westminster constituencies	89,000
County subdivisions	90,000[a]	Scottish, Welsh and Northern Irish	
Zip codes		parliamentary constituencies	74,000
Census tracts		Postal districts (2 letters + one digit)	
	About 4,000	Postal sectors (2 letters + 2 digits)	48,000[b]
Census block groups	(1–8,000)	Settlements	
	About 1,500	Wards/Divisions	
Census blocks	(300–3,000)	Output areas	14,400[b]
		Post codes (complete)	9,000[a]
	35		5,500[a]
			250
			48[b]

Sources: U.S. Census Bureau 2002; www.nationalstatistics.gov.uk
[a] Population can vary significantly
[b] Assuming average U.K. household size of 2.4 people
[c] England only

In summary, it is possible to locate comparable subnational areas, but in each case, analysts must carefully consider the particular purpose and nature of each type type of area available for study—whether it be legal-political, administrative, or statistical, or population-based or geographical. This issue is addressed in more detail in a subsequent paper in this series.[9]

[9] Rebecca Tunstall, "Studying Urban Areas in the United States and United Kingdom using the Censuses" (Washington: Brookings, forthcoming).

X. STUDYING TRENDS OVER TIME

One of the strengths of censuses as a research tool is the opportunity they offer to analyze change over time, especially since census organizations emphasize methodological consistency between census years. However, both the U.S. and U.K. censuses have changed methods, questions, analysis, and presentation of data over their last three rounds, albeit in mostly minor ways. In some instances, though, the changes affect comparability within and between countries over time.

A. United States: Changes between 1980 and 2000

The 2000 Census dropped 1990 questions on children ever born to respondents, water and sewage supplies, and condominium status. The census also made significant changes in questions on disability between 1990 and 2000, extending the age range from 15-year-olds and older to 5-year-olds and older, and adding categories of sensory disability and difficulty in climbing stairs, reaching, lifting and carrying (Table 12 lists the various changes). As a result, comparisons between the two decades on these measures are no longer recommended (Waldrop and Stern 2003. The questions on race and Hispanic origin changed between 1990 and 2000, creating sharper distinctions between the concepts, and providing respondents additional options to choose two or more races. The result is that data on race from the Census 2000 are no longer directly comparable with that from earlier censuses (Grieco and Cassidy 2001).

In 1980, "housing type" data included only "year-round housing," excluding vacation homes. In 1990, the "other" category in housing type was intended only to include types of accommodation similar to boat and mobile home. The specific suggestions were reintroduced in 2000. In 1990, home-value questions moved from short to long forms and were asked only of a sample; mobile homes were included; terminology was changed from "condominium" to "apartment"; and the top value was raised from $500,000 to $1 million (Bennefield 2003).

There were changes also in the naming, numbering, and boundaries of geographical units, including block groups and census tracts. These two create challenges for those studying changes in some areas over time.

Table 12. Comparability of Selected U.S. Census Data Over Time

	1980–1990	1990–2000	1980–2000
Questions or information missing from one or more dates	Two or more races Disability of those aged 5–15 Grandparents as caregivers Heating fuel	Two or more races Disability of those aged 5–15 Grandparents as caregivers Number of natural born children (women) Water and sewage supply Condominium status	Two or more races Disability of those aged 5–15 Grandparents as caregivers Heating fuel Number of natural born children (women) Water and sewage supply Condominium status
Changes to spatial units	Definitions of metropolitan area	Block groups and census tracts	Block groups and census tracts
Not comparable		Disability Race	Disability Race

Source: www.census.gov; Grieco and Cassidy 2001; Waldrop and Stern 2003

B. United Kingdom: Changes between 1981 and 2001

The published figures from the 1981 census in the United Kingdom included only those people counted. The 1991 figures included people counted plus those recorded in forms filled in by enumerators (Simpson and Dorling 1994). The 2001 figures included both these groups plus an estimate of all the remaining uncounted individuals, creating an estimate for total population. Therefore, population figures are not comparable between 2001 and earlier years. Researchers can, instead, compare mid-year estimates for total population produced by the Office for National Statistics. The midyear estimates are calculated by the same method and ultimately derived from census data. A subsequent paper in this series addresses these issues in more detail.[10]

Changes to the definition of residence for university students in 2001 made comparison over time of student population and populations in areas with many students difficult. The 2001 census was also the first to count people at their usual address rather than to count everyone present in a household on census night, including visitors.

Ethnic categories changed significantly in 2001, with more categories, a new category of "mixed" ethnicity, and the first use of an ethnicity question in Northern Ireland, where there was an additional category of "Irish Traveller" (National Statistics 2001a). Census 2001 incorporated new questions on health, caring for others, and religion. Dropped were questions on usual address and whereabouts on census night; fertility; professional and vocational qualifications; household water supply and domestic sewage (Northern Ireland Statistics and Research Agency 2003); and output of data for some special urban regeneration areas (Mann and Evans 1998). Census 2001 asked respondents about the relationship of all of the first five members of the household to one another,

[10] Rebecca Tunstall. "Americans and Britons: Key Population Data from the Last Three U.S. and U.K. Censuses. (Washington: Brookings, 2005).

rather than to a "household head." A new category of "separated but still legally married" was added.

Finally, spatial units have changed significantly, but an initiative by Manchester University, "Linking Censuses through Time," provides spatial proxies that can be compared with units in operation at any one time between 1981 and 2001.[11] A review of these changes is provided in Table 13.

Table 13. Comparability of Selected U.K. Census Data Over Time

	1981-1991	1991-2001	1981-2001
Questions/ information missing for at least one date	Limiting long-term illness Ethnicity Religion Health status Care giving	Mixed race Religion Health status Care giving	Limiting long-term illness Ethnicity Religion Health status Care giving Urban regeneration areas as spatial units
Changes to spatial units	Some districts, wards, parishes, and parliamentary constituencies	Standard regions, health service areas in England, TTWAs [a], some regions, districts, wards, parishes, and parliamentary constituencies "Local labour market areas," "major cities," "towns and cities" Urban regeneration areas discontinued as spatial units	Standard regions, health service areas in England, TTWAs [a], some regions, districts, wards, parishes, and parliamentary constituencies "Local labour market areas," "major cities," "towns and cities" Urban regeneration area units
Not comparable	Absolute population numbers	Absolute population numbers Location of university and college students and boarding school pupils Ethnicity	Absolute population numbers Location of university and college students and boarding school pupils Ethnicity

Source: Mann and Evans 1998; NISRA 2000; www.mimas.ac.uk/lct
[a] Travel to Work Areas, which define a single daily labor market

[11] For more information, see "Linking Censuses through Time, the LCT Project Home page, at www.mimas.ac.uk/lct/

XI. THE POTENTIAL FOR COMPARATIVE RESEARCH

Even this rather basic review of the U.S. and UK population censuses makes plain both the solid potential for bilateral comparability between national population data, and the utility of such data for further comparative research on the United States and the United Kingdom.

Researchers, policymakers, and practitioners are always interested in international comparisons as a means to generate and test hypotheses and new ideas. Censuses provide information that cannot be found elsewhere, particularly about local areas, which makes them valuable sources for research on population, housing and urban development, and many other topics. While international organizations collect information from many countries, often based on census data, there has been relatively little detailed comparative work using this resource, for example, on individual policy issues or on parts of countries such as urban areas. This gap in the research has owed in part to serious concern about the extent of similarity between censuses in different countries, and how to interpret differences.

To try to tackle these problems with reference to one pair of nations, this discussion paper has outlined the key features of the U.S. and U.K. censuses of population, and their main similarities and differences.

In broad terms, the U.S. and U.K. censuses resemble each other. Both were initiated early in the history of social investigation and boast long histories. While both still reveal traces of their differing original rationales and users, over time the two censuses have substantially converged. In recent decades, the two censuses have been carried out similarly. What they have asked, the response rates, forms of analysis, and the way data are all presented are generally comparable now. This allows for the possibility of useful comparative research between the U.S. and the U.K. on a wide range of topics. Comparative research can also be carried out for a wide range of spatial units from nations to neighborhoods. And it can produce both comparative snapshots and trends over time.

Additional papers in this series go on to put this potential into practice. These papers inaugurate basic comparative analysis of key demographic data at national, regional and city level in the two countries on people, households and families, housing and human capital.[12]

At the same time, this study has also revealed a number of differences between the censuses in the U.S. and U.K. These differences involve what was asked, how it was reported, and how information was processed and all of them create potential pitfalls for research that require careful attention.

[12] See, for example, Rebecca Tunstall, “Americans and Britons;” Rebecca Tunstall and Charlotte Kennedy, “At Home with Americans and Britons: Key Data on Households in the United States and United Kingdom since 1980” (Washington: Brookings, forthcoming); Rebecca Tunstall and Charlotte Kennedy, “Two Nations of Homeowners: Housing in the United States and United Kingdom since 1980” (Washington: Brookings, forthcoming); Rebecca Tunstall, “Human Capital in the United States and United Kingdom: Education, Skills, Health, Employment and Assets since 1980” (Washington: Brookings, forthcoming).

First, the two counts cover different topics and pose different questions. While the U.S. census asks about ancestry, citizenship, date of arrival if born abroad, details of military service, and work in the last year as well as current work, these issues are not covered by the U.K. canvass. However, the most significant gaps involve income and housing. No U.K. census has ever included questions on income, which has sometimes been a source of frustration to researchers in the U.K. and now poses a challenge to those aspiring to compare income distribution by all kinds of social variables and by varying geographies. For that reason, other papers in this series will discuss methods for working around the lack of income data from the U.K. census when engaging in comparative analysis, using alternative concepts and supplementary and alternative sources of data. Also frustrating is the absence from the U.K. census of more detailed questions on housing characteristics and housing costs. On the other hand, the U.K. census has recently included questions on religion and health, which would offer fascinating potential for comparison with the United States, but for the fact the U.S. census is silent on these topics.

Second, on several topic areas covered by both censuses the terms and categories employed differ significantly enough to create pitfalls of misinterpretation. In some cases, careful interpretation or "translation" can produce equivalent terms of categories. In other cases, differences can be seen not simply as problems for researchers but as reflective of significant conceptual, social, historical, or political differences between the two nations. A prime example is that even when both the U.S. and U.K. censuses cover the topic of “race” or “ethnicity,” they use racial and ethnic terms that cannot be rendered into fully equivalent categories. This owes at least partly to differences in the social and demographic realities of the two countries. Nomenclatural differences also complicate analysis and comparison of the two canvasses’ data pertaining to employment, education, housing, and transport.

Third, there is a problematic similarity between the U.S. and U.K. censuses, in that they have both altered their questions, analysis, and presentation of data over their long lives. As we have seen, a number of mostly minor changes made during the course of the last three rounds have in some areas create problems in comparing data over time even within one country, as well as between two. Comparative research here must proceed with the same kinds of cautions used within each country.

Fourthly, while information has generally been processed in similar ways in the two countries, the U.K. census 2001 was a ‘One Number’ census with published figures incorporating full estimates for people who did not answer the census, while earlier U.K. counts and all U.S. ones are based on actual counts. However, this creates no more problems for comparative analysis between the U.S. and U.K. than it does for analysis within the U.K. over time.

Finally, the spatial units used to report results are highly complex and idiosyncratic even within each of the countries. Another discussion paper looks in depth at urban definitions used in

policy and research in the two countries, including the spatial units used to report census data, and how they can be used to enable comparative research on urban areas and urban trends.[13]

In sum, the U.S. and U.K. censuses—despite their various differences of method, terminology, geography, and reporting—hold out exciting potential for comparative analyses of population, economic, housing, and development trends in the two countries. By employing a little ingenuity, researchers, policymakers, and practitioners will find the two censuses a rich source for future inquiry into the similarities and differences of the two nations.

[13] Rebecca Tunstall, "Studying Urban Areas."

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APPENDIX

Among the rich array of web resources available to those considering comparative analyses of the U.S. and U.K. censuses are these:

www.cluster1/claritas.com.
http://census.ac.uk
www.bcomm-scotland.gov.uk
www.boundarycommittee.org.uk
www.census.gov
www.census.pro.gov.uk
www.gro-scotland.gov.uk
www.lcd.gov.uk/constitution/crown/govguide.htm#part4
www.nationalstatistics.gov.uk/census2001
www.nisra.gov.uk/
www.statistics.gov.uk/census2001
www.nisra.gov.uk/census/censushistory/censusireland.html

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