

How Good is "How Well"? An Examination of the
Census English-Speaking Ability Question

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INTRODUCTION

Over the past few decades, the decennial census has become the servant of an increasingly large number of masters and demands. Far from the "total count" mechanism that many consider its sole function, the once-a-decade tool has been asked to address and assess numerous dimensions of the diverse fabric of the U.S. society. One general focus of interest centers on the many socio-demographic characteristics of the population. Some items, such as age and sex, are believed to be relatively well-measured by the census, and as such, are established 'constants' of the questionnaire. Other items such as education, while constant in conceptual terms, have been modified over time to reflect emerging needs or changes in the empirical circumstances of the concept. Part of the challenge of the decennial census is to provide the greatest collective pool of information at the smallest possible burden and cost.

One of the social characteristics the census attempts to assess is the language capacities of the population. As with education, the measurement of language has not been accomplished in the same way in each census. Lieberman (1966) and McArthur (1981) provide detailed descriptions of the language questions asked across each of the censuses. During the early part of the century, questions were asked about the ability to speak English; later, the focus was placed on "mother tongue", a vague concept assumed to tap the language background of individuals, rather than the ability to speak English itself. The mother tongue concept was used as recently as the 1970 census. As McArthur (1983) has noted, use of the mother tongue measure results in a very large number of persons who report some "connection" to a language other than English.

In the 1980 Census, the need to identify groups of similar-language speakers, as well as their relative ability to speak English, gave rise to a multipart language question. The need for this knowledge became particularly acute in the 1970's as legislation emerged which identified "language limitations" or "limited English ability" as valid types of disadvantage in learning, voting and access to public goods and services. This item asked the respondent if he/she spoke a language other than English at home, and if so, what the language was, as well as a

self-report concerning how well that person spoke English. Asking for languages "spoken at home" was presumed to filter out languages which were not a part of one's regular use; for example, languages learned as part of required classroom instruction and never used. The response categories for reporting English ability were listed as "very well", "well", "not well", and "not at all".

The results of this item, as used in the 1980 Census, revealed that about 23 million (11%) of the 210 million persons ages 5 and above reported that they spoke a language other than English at home. About half (56%) of these speakers of languages other than English reported that they spoke English "very well"; about one-quarter (26%) said "well"; 13% responded "not well"; and 5% said they did not speak English at all.

Thus, the subjective speaking ability question clearly elicited responses for every category. However, apart from the simple face validity of these categories, it was somewhat questionable as to what any given response (e.g., not well) meant. One "verification" of the categories came in the form of the English Language Proficiency Study (ELPS), administered in the fall of 1982 by the Census Bureau for the Department of Education. The ELPS used actual tests of English-understanding ability, and administered these tests to (primarily non-English speaking) individuals in their homes. Tests lasted approximately one and one-half hours, and were composed of a series of subtests. Later analysis of the ELPS showed that there was a strong correlation between responses to the "speaking ability" census item and the actual score on the test. In terms of a simple "pass-fail" criterion (based on an assigned cutoff point in the scoring), it was shown that persons responding "very well" to the speaking ability item had passing levels similar to the English-speaking population that had taken the test (as a control group), while persons reporting ability levels as "well" or worse had significantly higher levels of failure. Thus, in this context, the "how well" item exhibited a fair degree of validity.

Nevertheless, questions remain about the general utility and validity of the speaking ability question. In an attempt to provide greater elaboration of the question, a series of items was designed to examine other language-related characteristics of non-English

speakers. These items, concentrating on various aspects of language use and less subjective assessments of ability, are designed, much like the ELPS, to see if the categories of the census "how well" item act to truly differentiate individuals along a general dimension of English-speaking ability. In this paper, we examine the responses to this array of other ability-related indicators in the context of responses given to the original census ability question, attempting to assess the general issue of "how good is how well"?

DATA

The data for this analysis come from the 1986 National Content Test and its Reinterview, conducted by the Census Bureau during the spring and summer of 1986. In preparation for each recent decennial census, the Census Bureau has conducted a number of "test censuses" to test mechanics, operations, content and various other components of the census-taking activity. In 1986, the test census was dedicated primarily to the testing of content. The test exists not only to "try out" new or modified questions intended for the census itself, but also as an opportunity to collect data for cross-validation purposes, or to examine the feasibility of new items. In 1986 there was not only a test census, but a follow-up reinterview designed primarily to gauge the test-retest reliability of items.

The 1986 NCT is a national survey of about 26,000 households conducted using a combination of mail and personal interview methods. The survey was conducted during April of 1986, and about two-thirds of the households were administered the long form (containing detailed socio-demographic questions, including language). About three months later, one-fourth of the total NCT sample was administered a reinterview survey. The "base" data for this analysis are the matched interview-reinterview cases of the NCT.

As part of the test census, the standard language question, consisting of 3 parts, was used. This question asks if the person speaks a language other than English at home; and if yes, what the language is and how well the person speaks English. In the reinterview, we asked different questions which addressed a number of issues related to language use. These include: language spoken in one's home as a child, current number of languages spoken, where spoken, spoken to whom, where learned, frequency spoken, and four "objective" indicators; ability to read a book in the foreign language, ability to write a postcard in the language, ability to read a book in English, and ability to write a postcard in English. The analysis in this paper

is based on the matched interview-reinterview cases of persons speaking a language other than English, using these items.

Not every case was able to be matched, due to changes in households, refusals, or other circumstances. While analysis could be undertaken using the largest possible subset of data (that is, cases with any relevant data be it only in interview or noninterview) we have elected to limit the analysis only to those matched cases with data in both the interview and reinterview. Using this smaller subset of data (647 cases) allows us to concentrate on relationships between the items without attempting to explain or accommodate problems of nonresponse or nonmatching. The matched cases form a reasonable subsample of the original NCT sample, which was assumed to be nationally-representative. The sample for analysis may not be, and is not claimed to be, a representative sample of the national population. As such, the analysis undertaken here is of the sample data and attempts to elaborate the relationship of items as collected in this sample.

ANALYSIS

A. Socio-Demographic Factors

Table 1 presents the crosstabulation of the speaking ability "how well" item by a series of simple socio-demographic measures. It should be noted that the distribution of responses to the speaking ability item is somewhat different than that observed in the 1980 Census; there is a much larger proportion of persons reporting that they speak English "very well," and smaller proportions who respond "not well" or "not at all". This may be due to an actual change in the population, or to some sort of sample bias. Since the selected subsample (of matched interview-reinterview cases) matches the distribution for the non-English speaking population in the larger, original interview sample, we are not prepared to dismiss the first reason (that is, actual change since 1980). Additionally, while the sample count of persons reporting an English-speaking ability of "not at all" is somewhat small (10), we have elected to keep this as a separate category for use in this analysis.

The simple chi-square tests for the distribution of speaking ability indicates that there are differences across certain dimensions. The data show lower levels of reported ability for women, races other than White, Hispanics, proxy reports, recent immigrants, and persons with low education. None of these patterns are particularly surprising. The strong patterns of association with recency of

migration, Hispanics and Spanish speakers, in fact, all point to the possibility that low English-language ability may be dominated by one main group.

The lower levels of ability reported by proxy respondents for others is of some concern. If in fact, proxies report significantly lower levels simply because they are proxies, then there is a problem. If, however, proxies report because the subject is incapable of doing so (that is, can't read the questionnaire or speak the language), then it is intuitively reasonable that the ability level of these persons should be lower than for those who are able to report about themselves. Of all cases reporting low or no English ability, a substantial proportion are proxy reports. As such, inconsistent proxy reports of general ability would probably conflict with other, more objective measures also given by the proxy, and this would be evident in the cross-classifications of low/no ability status with these other measures. As we shall see, this does not occur. Thus, it seems likely that the second scenario (proxies reporting for those unable to do so) is plausible.

In general, the patterns of speaking ability within the series of socio-demographic items indicate that there is variability. The socio-demographic variation is interesting, but does not help to answer the question of whether reported speaking ability varies with other components of language use. Tables 2-4 detail the results of a series of two-way tabular analyses involving the "how well" ability item with other items collected in the NCT Reinterview.

B. Background Factors

One of the oft-presumed correlates of non-English language use are the conditions under which the language was acquired. As noted, language was at one time measured in the census by use of the "mother tongue" concept. Essentially, it is believed that languages learned as a child (i.e., spoken by one's parents) have greater meaning and are more likely to stay with an individual throughout their life, than are those learned in school or at work. In the NCT reinterview, persons were asked if their reported language was spoken in their home when they were a child. The first panel of Table 2 shows a strong relationship between this item and English ability. Virtually all persons who said they spoke English "not well" or "not at all" also said that their non-English language had been spoken in their home as a child. The second panel in Table 2 reinforces this idea of language "transmission" and relative ability in English. Persons

who said they learned their non-English language from their family accounted for nearly all individuals who reported English ability of "well" or less. At the same time, persons who reported learning their non-English language somewhere else (i.e., school, military or other) almost always said they could speak English "very well". (They were, in fact, four times more likely to report "very well" than were persons who had learned their language at home.)

A sizable proportion (.23) of the speakers of a language other than English said they spoke more than one non-English language. Multiple language capacity apparently has little to do with English ability, however, as the last panel of Table 2 shows. Persons reporting 2 or more non-English languages had about the same level of English ability as did those who said they spoke only one non-English language.

Thus, while the number of languages seems to have no relationship to English ability it appears that family origination and language use as a child are consistent characteristics of most persons with low ability in English. Of course, the converse is not necessarily true; that is, there are persons who were exposed to a non-English language in their home as a child and who speak the language as an adult, but they also report that they speak English "very well".

C. Current Uses and Contexts

Clearly, childhood background and language experience tell us something about possible English ability, but another dimension involves current language use. Table 3 elaborates some of the places and contexts in which persons report using languages other than English. In the first panel of Table 3, we examine English speaking ability by reported non-English use in six general "places" (individuals could choose as many places as they wished). Of the 6 choices, there were 3 that showed significant interaction with reported English-speaking ability. Persons who said they spoke their language at home or with friends had, on average, lower levels of English ability than those who did not report these places. Persons who reported they used the language at work or at school, on the other hand, did not differ in ability from those who did not speak the language in these places. A residual "other" category was more frequently picked by "very well" ability persons than by others. The response of "nowhere" was chosen only by a small proportion of persons, all of whom reported ability levels of "very well" or "well".

The second panel of Table 3 shows the

use of non-English language in certain specific circumstances. The first three of these: family members in the home, relatives outside the home and with friends, are similar to responses in the "places" dimension shown in the first panel. Generally, low English ability speakers were fairly likely to report these as circumstances where they used the non-English language. Three other circumstances - talking with persons employed in the home; to keep others from understanding, and uses as slang or phrases, were not useful in differentiating persons in terms of their English ability. Once again, the "other" category did interact significantly with ability, identifying a small group of high-ability speakers.

The results of the two panels seem to identify the low-ability English speakers as those who are likely to be a part of non-English speaking households. Low ability individuals report non-English use at home and with friends in a consistent fashion. Of course, there are also many high-ability persons who use a non-English language at home or with friends, but the low-ability persons always, or almost always, report these types of use. In short, people who have problems with English may speak their other language in any place where they feel comfortable doing so, or where they perceive that it's okay to do so (i.e., at home or with friends.) In settings where it might not be appropriate, however (e.g., work), these same persons are much less likely to use the non-English language.

D. Relative and Specific Abilities

Language background and conditions of use have both been shown to be associated with English ability, at least in some rudimentary fashion. In Table 4 we turn to the last dimension of consideration: relative frequency and specific abilities. The first panel of Table 4 shows the relationship between the "how well" item and a question which asks the individual to compare their frequency of English versus non-English use. The results are clear and strong, as indicated by the significant chi-square value of nearly 300. Most persons who reported their speaking ability as "not well" or "not at all" also said they never spoke English or spoke their other language more often than English. Similarly, only a few of the people who said they spoke English "very well" reported using the other language more often or exclusively. Of course one might argue that the relationship between these two items is so strong ($\phi = .68$) because they measure nearly the same thing. Even if this were the case (which it is not) one would find it difficult to argue with, since part of the goal of this analysis is to find alternative empirical

measures which correspond well to an apparent subjective self-evaluation of ability.

The second panel of Table 4 details the responses of reported ability in the context of four different "objective" measures of language ability. Persons were asked whether they felt they could read a book or magazine in their reported "other" language, or write a postcard or letter in it, and if they could read a book or magazine in English or write a postcard or letter in it. As the data indicate, two of these items associated strongly with reported ability, and two did not. The data show that English ability exhibited no relationship with the ability to read or write in the other language; that is, knowing an individual's English ability level reveals nothing about whether that person is able to read or write in the non-English language they say they can speak.

The other two items regarding the ability to read and or write in English, however, did demonstrate significant association with speaking ability ($\phi = .60$ for both items). All persons who said they spoke English "not at all", and about one-third of those who said they spoke it "not well" said they could not read or write in English. On the other hand, most people who said they could speak English "well" and virtually all who said they could speak it "very well" reported that they could read and write English. These two items, asked about three months after the initial evaluation of English ability, provide strong corroborative evidence of the utility of the "how well" item and its ability to distinguish operationally different classes of non-English speakers.

SUMMARY

In this paper an exploration of the census self-reported English ability question has been pursued. The analysis demonstrates a fair degree of association and consistency between the item used in the census and a series of other language-related items. These other items include background measures, current use contexts, and several operational measures which are presumed to be less subjective than the "how well" question itself. The data do not detail a firm discrimination between the four different categories of the "how well" question, but there are clear differences between the very best speakers of English and the very worst (in terms of "how well".)

Persons who say they speak English "not at all", and many who say they speak it "not well" demonstrate high levels of use of their other language with friends and family, and in the home. The vast majority of them say

they can read and write in this other language. Most of them also say the language was spoken in their home as a child, and that they learned it from their family. However, many of the people who say they speak English "very well" or "well" also report these same qualities, although not nearly in as high a proportionate magnitude as for the less well-speaking persons. Of all the characteristics examined, the ones which seems to best identify the "very well" subpopulation are items like length of residence, education and reported frequency of speaking English. In short, the "not at all" and "not well" items come closer to identifying a unique subpopulation (one that we might call "in need of English assistance"), than do the "very well" and "well" categories, (which we might say are "English assimilated" to varying extents).

These data, perhaps because of the small samples in some cells, do not indicate "clean" differentiation between each of the 4 levels of English-speaking ability, but this does not mean that the "how well" item is not a useful discriminator of English-ability. The use of four categories instead of two (call them "able" and "inable") allows individuals (or their proxies) to use a finer discrimination, even if this is an arbitrary one to some extent. Erring by one category in responding to "how well" will in many cases not change the final

distribution of the 2-category able/inable measure.

While the analysis is somewhat limited by a small number of observations in some categories, the systematic patterns observed in the data are encouraging. Further analysis, concentrating on these data in a multivariate modelling context, might reveal even stronger associations and clusters of characteristics within English ability groupings.

REFERENCES

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43. In what month and year did (you/...) receive final naturalization papers?	44. ASK OF ALL PERSONS NOT BORN IN THE U.S. In what month and year did (you/...) come to the United States to stay?	CHECK ITEM K Refer to question 2a What is... 's age?	45. Was a language other than English spoken in (you/...) home when (you were/... was) a child?
Month: <input type="text"/> <input type="text"/> Year: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Month: <input type="text"/> <input type="text"/> Year: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="checkbox"/> 18 years old and over - Ask 46 <input type="checkbox"/> 3-17 years old - SKIP to 48 <input type="checkbox"/> Under 3 years old - SKIP to next person	<input type="checkbox"/> Yes - What was the language? <input type="text"/> ----- <input type="checkbox"/> No

46. What languages (are you/...) able to speak? List all that apply, both English and non-English.	CHECK ITEM L How many non-English languages are reported in item 46?	47. IF ONLY 1 IN CHECK ITEM L, WRITE NON-ENGLISH LANGUAGE FROM 48 WITHOUT ASKING. Which non-English language (do you/does...) speak most frequently?	48. Where (do you/does...) speak (Language in 47)? Read categories and mark (X) all that apply.	49. Where did (you/...) first learn to speak (Language in 47)?
- - - -	<input type="checkbox"/> Speaks only English - SKIP to 57 on page 27 - Total number of non-English languages spoken - Ask 47	-----	<input type="checkbox"/> Home <input type="checkbox"/> Work <input type="checkbox"/> School <input type="checkbox"/> With friends <input type="checkbox"/> Other <input type="checkbox"/> Not spoken anywhere	<input type="checkbox"/> Family <input type="checkbox"/> School <input type="checkbox"/> In the military <input type="checkbox"/> Other

50. Under what circumstances (do you/does...) speak (Language in 47)? Read all categories and mark (X) all that apply.	51. Compared to English, how much of the time (do you/does...) speak (Language in 47) at home?	CHECK ITEM M Refer to question 2a. Are any other persons in the household under 18 years old (any children)?	52. What language (do you/does...) USUALLY speak to the children in this household?
<input type="checkbox"/> Talking with family members in the home <input type="checkbox"/> Talking with relatives not living in this home <input type="checkbox"/> Talking with friends <input type="checkbox"/> Talking with persons employed in this home <input type="checkbox"/> When you don't want others to understand <input type="checkbox"/> When using specific phrases, expressions or slang <input type="checkbox"/> Other	<input type="checkbox"/> Never speak English <input type="checkbox"/> More often than English <input type="checkbox"/> About the same as English <input type="checkbox"/> Less often than English <input type="checkbox"/> Rarely	<input type="checkbox"/> Yes - Ask 52 <input type="checkbox"/> No - SKIP to 53	<input type="checkbox"/> English <input type="checkbox"/> Language reported in 47 <input type="checkbox"/> Some other language - Specify <input type="text"/>

53. Can (you/...) read a book, magazine, or newspaper printed in (Language in 47)?	54. Can (you/...) write a postcard or letter in (Language in 47)?	55. Can (you/...) read a book, magazine, or newspaper printed in English?	56. Can (you/...) write a postcard or letter in English?
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

Table 2. English-Speaking Ability by Socio-Demographic Characteristics

	Very Well	Well	Not Well	Not at All	Chi-square (prob.)
TOTAL	452	140	45	10	-
SEX					
Male	209	66	19	0	7.3
Female	238	70	24	8	(.06)
RACE					
White	386	114	31	8	9.2
Nonwhite	64	26	14	2	(.03)
SPANISH ORIGIN					
Hispanic	101	46	15	8	22.9
Not Hisp.	346	91	29	2	(.00)
AGE					
18-39	148	38	13	1	6.7
40-64	191	67	16	5	(.35)
65+	113	35	16	4	
RESPONDENT					
Self	388	130	33	3	40.6
Proxy	54	10	12	7	(.00)
RESIDENT STATUS					
Born US	259	53	12	2	47.4
Immigrant:					(.00)
LT 10 yrs	38	14	12	1	
10-19 yrs	40	21	8	4	
20+ yrs	115	52	13	3	
EDUCATION					
LT 12 yrs	90	59	32	9	98.8
12 yrs	128	46	8	1	(.00)
C1-3	94	14	4	0	
C4+	138	21	1	0	
LANGUAGE					
Spanish	124	51	16	8	32.7
German	58	14	2	0	(.01)
Italian	40	12	1	0	
French	51	6	1	0	
Polish	25	6	2	0	
All Other	154	51	23	2	

NOTE FOR TABLES 2-5: Numbers in tables represent cases with reported data; missing cases vary by item and can be computed by subtracting table totals from case total shown at top.

Table 3. English-Speaking Ability by Language Background Factors

	Very Well	Well	Not Well	Not at All	Chi-square (prob.)
TOTAL	452	140	45	10	
LANGUAGE SPOKEN IN HOME AS A CHILD					
Yes	378	130	40	10	16.9
No	60	4	1	0	(.00)
WHERE LANGUAGE WAS LEARNED					
Family	364	127	42	10	17.1
School	55	5	1	0	(.05)
Military	4	1	0	0	
Other	13	2	0	0	
NUMBER OF NONENGLISH LANGUAGES					
One	338	117	35	7	4.9
Two or more	114	23	10	3	(.18)

Table 4. English-Speaking Ability by Language Context Factors

	Very Well	Well	Not Well	Not at All	Chi-square (prob.)
TOTAL	452	140	45	10	
WHERE THE LANGUAGE IS SPOKEN (Each item is a separate response)					
Home	265	107	36	10	25.7 (.00)
Work	95	28	7	2	.7 (.86)
School	17	6	0	0	2.3 (.51)
Friends	252	100	26	8	12.7 (.01)
Other	112	18	8	3	9.7 (.02)
Nowhere	39	11	0	0	5.1 (.16)
CONDITIONS UNDER WHICH LANGUAGE IS SPOKEN (Each item is a separate response)					
Family members in home	265	109	33	10	24.7 (.00)
Relatives not in the home	280	102	34	10	13.2 (.00)
Talking with friends	266	108	28	10	21.3 (.00)
Persons employed in the home	23	13	1	1	4.8 (.18)
Keep others from understanding	119	46	11	4	3.7 (.35)
Specific phrases or slang	166	59	12	4	3.7 (.30)
Other	90	15	2	0	13.9 (.00)

NOTE FOR TABLE 4: Each of the responses shown for the two panels in this table are separate response categories asked in multiple response items (questions 48 and 50 in Attachment B). Chi-square values are calculated using the 2 X 4 cell table where one dimension is the item of interest with two categories: yes (answer is chosen) and no (answer is not chosen).

Table 5. English-Speaking Ability by Relative and Specific Uses

	Very Well	Well	Not Well	Not at All	Chi-square (prob.)
TOTAL	452	140	45	10	
FREQUENCY SPOKEN COMPARED TO ENGLISH					
Never speak English	5	6	9	8	300
More often	22	43	20	2	(.00)
About same	65	26	5	0	
Less often	155	36	4	0	
Rarely other	203	29	7	0	
FUNCTIONAL ACTIVITIES ('yes' responses) (Each item is a separate response)					
TOTAL	452	140	45	10	
Read other	351	112	31	8	2.8 (.42)
Write other	331	111	32	9	3.0 (.39)
Read English	442	130	31	0	230.5 (.00)
Write English	439	128	26	0	224.7 (.00)