Some Thoughts on Combining Samples of the General Social Survey (GSS) and the American National Election Studies (ANES)

William D. Kalsbeek

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1. Purpose

On August 31, 2016 I was asked by the National Academy's Standing Committee on the Future of the NSF-Funded Social Science Infrastructure Surveys to think about the feasibility, practicality, and likely cost-savings of somehow combining the samples of the General Social Survey (GSS) and the American National Election Studies (ANES). This effort appears to be part of the Committee's deliberations in searching for ways to maintain the quality of these surveys while reducing operating costs. The GSS and ANES are important long-standing national population-directed studies that have helped social scientists profile and better understand a broad array of social and political phenomena in the United States.

I have interpreted my assignment to include both the sampling and data collection components of the design of these two surveys, while excluding matters related to their core missions and thus the substantive content of their survey instruments. Furthermore, I explored avenues for realized improvements as it relates to the combined cost of conducting these surveys as well as the statistical collective utility of the sample data these surveys produce. Finally, I considered quantifying any anticipated gains or losses to be beyond the scope of my limited investigation, since a more intensive design study would be required to do so.

One notion was clear to me from the start. There is no likelihood of cost savings from a combined sample of these two surveys unless there is some degree of planned overlap between them.[1] Planned overlap is necessary since continuing to use completely independent samples results in very little if any chance overlap between the two samples, and thus no opportunity for cost savings from process efficiencies in working the same member of the sample for both surveys (e.g., in recruiting one household to complete an interview with a qualifying respondent for both surveys). For this reason, the challenge is to find the best way to create survey samples for future rounds of the GSS and ANES with planned overlap, which begs the question as to how best insert overlap into the two samples.

***POINT #1**: Any move towards combining samples from the GSS and ANES must include efforts to create planned overlap to some degree in the two samples. Without planned overlapped, combined costs of the two surveys will not change so long as individual survey design features affecting cost are left unchanged (e.g., overall respondent sample size).*

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[1] It's important to distinguish the two types of overlap between samples. I use the phrase *planned overlap* to refer to overlap between two samples where some members of the population are include in both samples by design, as opposed to *chance overlap* occurring strictly by the fact that some members of the population happened to be randomly chosen in both samples. Chance overlap is generally an operational nuisance of little scientific consequence, whereas planned overlap can have important scientific implications (e.g., in estimating temporal change from periodic samples). Only planned overlap is considered in this report.

2. Process

The design of any survey consists of two main components. The *sample design* describes the plan for choosing the sample to be recruited for data gathering, and the *field operations plan* indicates how recruitment and data collection are to be conducted by field staff to produce the sample data to be analyzed. Most periodic national household surveys involving face-to-face data gathering (like the GSS and the ANES) follow some form of stratified multi-stage area cluster sampling of United States households. Full-time central office project staff of these surveys typically include a survey director, who is supported by various technical directors (e.g., of sampling, data processing, analysis, etc.) and a field operations director who, along with various regional supervisors, organizes and conducts the training and field supervision of a group of mostly part-time interviewers, living in relative geographic proximity to selected households, who collect survey data from residents of households that agree to participate.

My first step was to become more familiar with what I imagined would be relevant features of the design of each survey. The Committee facilitated this effort by putting me in touch with leaders of the research organizations that currently conduct the two surveys, Tom Smith at NORC for the GSS and Matthew DeBeer at Stanford University for the ANES. These individuals provided me with additional documentation to go with the incomplete and somewhat outdated information I had been able to locate on-line, and they answered other questions about relevant aspects of the survey designs that were not covered in the discovered documents. Unfortunately, I lacked the follow-up time to fully clarify information on all of the documents I received.

The second part of my effort was to think about two aspects of the designs of the GSS and ANES that seemed to be relevant here, namely: (i) the contractual arrangements for conducting the two surveys, and (ii) the type/level/degree of planned overlap between their samples. First, I compared the implications of continuing to run the two surveys with separate contractors, versus having both surveys run by a single contractor. I then considered some ways to create overlap in the two survey samples, and suggested some implications of each level of overlap. I conclude by sketching a more specific remedy for the Committee to consider.

3. Comparison of the Sample Designs

Attachments 1 and 2 contain what I have been able to determine about relevant aspects of the designs of the GSS and ANES, respectively. They include organizational and process information about each survey, as well as a tabular summary of various sampling features (columns) for each sample selection stage (rows). Both designs follow accepted standards for high quality sampling in household surveys.

From these design summary tables we see that survey respondents in each survey are randomly chosen within a stratified multi-stage probability sample of households in which probability proportionate to size (PPS) sampling is used to select the unequal-sized clusters in the early stages,

but there is where the similarity ends. Important distinguishing features between the two designs are the:

a. Target population --- The GSS currently samples all ages and covers all 50 U.S. states, while the ANES targets just those 18 years and older who either speak English or Spanish in the 48 coterminous states, thus making the ANES target population a subset of the GSS target population.
b. Number of sampling stages --- The 2016 ANES household sample is selected in two stages, while the sample of households currently chosen for the GSS is selected in either three or four stages, depending on whether or not there is an intermediate sampling stage between selection of local area "segments" and households.
c. Sampling units in each stage --- First stage sampling units (or PSUs) in the GSS are individual or small contiguous group of counties in both urban or rural areas, while the ANES selects Census Tracts in the first stage of sampling. Both surveys eventually select household addresses or listed housing units (HUs), but the GSS does so in either the third or fourth stage and the ANES does so in the second stage. Finally, the GSS appears to select an area unit of intermediate size in the third stage, while the ANES has no such intermediate area sampling stage.
d. Use of stratification --- Both survey samples are stratified in the first stage but with different stratification variables defining different sets of strata. With its use of PPS systematic sampling in which sorting criteria for the frame are so-called "implicit strata," the GSS appears to use both explicit and implicit stratification, while the PSUs in the ANES are only selected from explicit geographic strata, in which a PSU sample is separately chosen within each stratum.
e. Use of Probability Proportionate to Size (PPS) Selection of Clusters --- Both surveys select PPS samples of clusters in the early stages (as is commonly seen in well-designed national cluster samples of households of this type), but the GSS uses PPS systematic sampling which also implicitly stratifies the resulting sample of clusters depending on how the frame (i.e., list) of clusters was sorted prior to selection.
f. Overall and Stage-specific sample sizes --- While overall respondent samples in both surveys are of somewhat different but of moderate size for a national face-to-face household survey; i.e., about 2,200 for the GSS in 2004 and about 1,200 for the ANES in 2016. Stage-specific sample sizes also tend to differ somewhat between the two surveys and among rounds of data collection for individual survey.

The observed differences in specific features of the two sample design do not surprise me. As in architecture, designs of statistically valid probability samples like the GSS and ANES reflect differences in the information needs they are designed to address, the field data collection capabilities of the survey organization that conducts them, their budgetary limitations, as well as the style and preferences of their designer(s). But herein lies the main barrier to successfully combining the GSS and ANES survey samples. Without identical design structure (i.e., in number of stages, definition and available lists of stage-specific sampling units, sets of sampling strata, and selection algorithms, etc.), two samples cannot be merged to create overlap. This also raises in my mind the

question as whether creating a common design for future GSS and ANES rounds is best done by two contactors or one.

POINT #2: *The sample designs of the GSS and the ANES have several different structural characteristics (e.g., number of stages, stages-specific sampling units, use of stratification, etc.), and thus do not lend themselves to planned overlap.*

POINT #3: *Planned overlap in the GSS and ANES samples can only be achieved by selecting the samples for both from the same sample design.*

4. Two Contractors or One?

So what then would be plausible options as regards combining samples for the GSS and ANES? I see two, as distinguished by the number of contractors involved in designing and conducting the two surveys.

OPTION C1: One Contractor, One Sample Design --- Under this option one contractor would be retained to do the sampling and data collection for both surveys. As in OPTION C2, calling for the current approach with a different contractor conducting the two surveys, some portion of the selected sample from the one design would participate in both surveys. If the timelines of data collection in each round of the GSS and ANES were to remain fixed, the timing of data collection would limit the amount of time when the single contractor is conducting both surveys simultaneously. With GSS recruitment and data gathering running from March through September on all even-numbered years, and ANES field operations running from Labor Day through the end of December on presidential election years, the only time when both field operations would be active is September of presidential election years. To eliminate overlap in the timing of data collection in the two surveys altogether, data collection for the GSS might be moved to odd numbered years, as I understand the Committee has considered. However, as discussed more fully later, there may be some utility in running the ANES pre-election survey as the GSS is winding down if the two samples overlapped at the household level.

Having one survey organization running both surveys may also have cost advantages not likely in OPTION C2. For instance, since both the GSS and the ANES respondent samples are moderate in size, there may be additional cost benefits for the field operation by having the same central office staff running both surveys, although this benefit could be offset by a single contractor's lack of experience. More specifically, limiting the number of contractors to one would also have the disadvantage of staff in the contracted organization lacking experience with at least one of the two surveys. So if, for example, the GSS were asked to conduct both the GSS and the ANES, GSS central office and supervisory field staff would lack prior experience in conducting the ANES. Thus, there would be a price to pay with time and effort by GSS project staff to become familiar with conducting election surveys of the voting age population.

OPTION C2: Two Contractors, One Sample Design --- Creating a common sample design, with different contractors conduct the GSS and ANES (the present contractual model), could be

accomplished in a number of ways. One would be for the sampling staffs of the two survey organizations to create a new common sample design that accommodates the information needs of both surveys. On the other hand, if one contractor sees the design of the other as meeting their survey's needs as well, another approach would be for this organization to adopt the other organization's sample design for its survey as well. A couple of possible barriers to doing so would be things like differing target areas (e.g., the GSS currently includes Alaska and Hawaii; the ANES does not) and whether or not to oversample key population subgroups (as both surveys have done in the past). However, with compromise being a hallmark of most well-developed sample designs, so I would be surprised if these kinds of barriers became insurmountable to developing a new common design.

If the two current contractors continued to be involved with these surveys, the best time to discuss a merger of designs might be around the time of the 2020 census, when NORC will be developing its next General National Sample and therefor considering design modification. The year 2020 might also work for Stanford , since by then they will have used their current sample design for three rounds (2008, 2012, and 2016) and thus may be open to revisiting their design, especially if there are changes being considered (e.g., adding Alaska and Hawaii to the ANES target population).

There are precedents for negotiating a common design between two surveys for the benefit of both. For instance, in the mid-1990s the National Medical Care Expenditure Survey, a national household survey like the GSS and the ANES and conducted by the Agency for Health Care Policy and Research (AHCPR), integrated its design at the household level with the National Health Interview Survey conducted by the National Center for Health Statistics. By all accounts this example of design integration and organizational cooperation proved to be mutually advantageous. Another point in favor of this option is that many large surveys have been conducted where multiple survey organizations, each with its own sampling capacity, agreed to use the sample design of one of the partner organizations (e.g., NORC and the Survey Research Center at the University of Michigan collaborated in developing the 1980 sample design for the GSS). The point is that survey organizations are used to the give and take of multi-organization collaborations where each organization brings its own strengths to the table to create something better.

The experience advantage of OPTION C2 compared to the likely staff salary cost benefit of OPTION C1 may depends on the degree of overlap in the two survey samples. If completely independent samples are use as at present, the advantages of both options may be similar. However, as more planned overlap is built into the two samples, the cost advantages of OPTION C1 may overshadow the experience benefits of OPTION C2, as seen in the next section.

POINT #4: *The more planned overlap in the samples generated by a common design, the more likely that having one survey contractor (rather than two) do both surveys will be less costly .*

5. What Level of Planned Overlap Is Created for the Combined Samples?

Overlapping samples are an important device in the sample designer's toolbox. Planned sample overlap is a main ingredient in the longitudinal study design by providing the means to gauge temporal effects on social behavior. Planned sample overlap also improves the precision of comparative findings. Here, the primary benefit of overlap may be reduced survey cost although there may be statistical utility as well.

The main potential statistical benefit of overlapping GSS and ANES samples of respondents is that it may be possible to link interview data from the two surveys when a respondent completes both survey interviews. If, for example, some general social behavior data items from the GSS (targeting all ages) accompanied the voting behavior items for the 18+ year old respondents in the ANES, our ability to understand the determinants some types of voting behavior might be enhanced by having additional relevant data (from the GSS) available. Clearly, overlap at the respondent level must exist for this benefit to be realized.

I begin with a few observations regarding overlap in household samples from a common design employing multi-stage cluster sampling. First, the two samples selected from these designs will only be completely independent if the samples in <u>each</u> sampling stage have been independently selected. Second, two completely independent household samples will have no planned overlap, but they may have a very small amount of chance overlap among the households that are chosen in them. Third, planned overlap in the samples from any stage of a common design can only occur if there is corresponding planned overlap in the samples selected in each of the preceding selection stages. For instance, if we wish for some of the selected Secondary Sampling Units (SSUs) overlap between the two samples, the Primary Sampling Units (PSUs) in which the overlapping SSUs are found must also be overlapping PSUs. And thus finally, the lower one gets into the social hierarchy of a multi-stage household sample, the greater the overlap among stages in the design. Desired overlap at Stage 1 implies overlap at Stage 1 only, intended overlap at Stage 2 implies the need for overlap at Stage 1 as well, planned overlap at Stage 3 implies the need for overlap at Stages 1 and 2 also, etc.

***POINT #5**: Planned overlap at any stage of a cluster sample requires that comparable overlap has occurred in all previous stages of selection.*

Planned overlap in multi-stage samples has a direct effect on the potential for cost savings realized by integrating the data collection plans of the GSS and ANES, primarily by creating a potential for more efficient management of the survey field operation, particularly as it relates to savings in the salaries paid to staff involved in the field operation, such as interviewers, regional supervisors, the field director, and the study director. The key to speculating on cost savings is in deciding which types of staff would be affected by the stages of the sample in which overlap occurs. While it is conceivable that the amount of cost savings would differ depending on if overlap was sought at the level of PSUs, SSUs, or any other sampling stage, I consider only the following two groupings of sampling stages at which overlap is sought: (i) *one of the HU cluster stages,* meaning at any sampling stage where clusters of HUs are chosen, or (ii) *the HU or individual stage*, implying the

penultimate (i.e., HU) or final (i.e., individual) sampling stage in selecting those to be recruited to complete a survey interview.

Aside from applying standard cost-saving measures to each individual survey (e.g., by reducing sample sizes, shortening questionnaires, reducing incentives, etc.), combining the field operations of at least partially overlapping samples of the GSS and ANES is one way to reduce the combined cost of conducting these surveys compared to the present circumstances. Therein lies the rationale for the two options I define below, which differ according to the level of the common multi-stage design at which overlap is sought.

OPTION L1: GSS and ANES Sample Overlap at One of the HU Cluster Stages --- In this option both surveys intend to share the same sample PSUs, SSUs, or any subsequent sampling stages prior to the HU/residential address selection stage in their respective samples. It also implies that regional supervisors would oversee the work of field interviewers in the same clusters for both surveys, but with different samples of households chosen in each cluster.

Any cost advantage here would be tied to savings in the salaries of the study director, field directors, as well as the regional supervisors. With one contractor doing both surveys (OPTION C1) the savings is likely to be greater compared to the current contractual arrangement or OPTION C2. The reason is that the moderate size of the samples in the GSS and ANES make it possible for the salary costs for one set of regional supervisors overseeing the two survey data collection operations on presidential election years to be less than the same costs of two sets of regional supervisors overseeing field work under the other scenarios.

OPTION L2: GSS and ANES Sample Overlap at the HU or Individual Stage --- This option implies that regional supervisors would be overseeing the work of field interviewers in the same clusters at every stage for both surveys, with each cluster also having the same set of residential addresses/HUs and individuals, depending on the design level for which overlap is sought.

Cost advantages of OPTION L2 would most likely be greater than those for OPTION L1. Efficiencies in cost here would be tied to the salaries of the same staff affected by OPTION L1, plus those for interviewer salaries to the extent that the same set of interviewers were used for both surveys for the survey rounds in presidential election years. One reason is that with overlap intended for the HU level of sampling, only one set of sample households would need to be recruited for participation (in both surveys). Also, household rostering and respondent selection for both surveys could be done at the same time. Moreover, having a single contractor (OPTION C1) who hires the same set of interviewers for both surveys should further increase the cost savings beyond that realized in OPTION L1, since there would be new savings in the cost of conducting interviewer training and interviewer salaries for sample recruitment, to go with those already seen in OPTION L1. For instance, with GSS data gathering in a presidential election year running from March through September and ANES data collection for the pre-election survey beginning right after Labor day, recruitment for the same HU sample used by the GSS and ANES could be done as part of GSS sample recruitment. Also, monetary incentives currently offered in the ANES would also benefit GSS recruitment.

***POINT #6**: The more planned overlap in the GSS and the ANES the greater the potential for cost savings compared the current situation with different designs and no planned overlap.*

A few procedural issues would need to be addressed under this option if the same interviewers are used for both surveys (most likely to happen under OPTION C1). One is to determine how best to do within-HU selection for the surveys in the presidential year if HU is the lowest level of overlap; e.g., by independently selecting separate respondent samples for each survey, or simply designating for ANES data collection all ANES-eligible selected respondents, thus creating overlap at the individual level and opening the door for merging GSS and ANES respondents to realize the advantage of data linkage between response to both surveys, as noted earlier in this section.

6. An Unsolicited More Specific Recommendation?

I'm not certain that you were seeking a recommendation from me based on my one month investigation into potential money-saving modifications in the designs of the GSS and the ANES, but at this point I conclude that the best strategy going forward would be for the Committee to work towards:

1. Having one contractor to run both the GSS and the ANES (OPTION C1);
2. Installing a common design for both survey samples;
3. Aiming for presidential election year survey samples with at least partial sample overlap at the Address/HU or individual level (with 100% overlap preferred) for the ANES with the GSS, based on the common design (OPTION L2); and
4. Retaining the current survey data collection timelines for the surveys (i.e. the GSS in all even-numbered years and the ANES in presidential election years), with the completion of the GSS leading into the pre-election survey of the ANES in presidential election years.

***POINT #7**: Having a single contractor conducting both the GSS and ANES following their current data collection timelines and using a completely overlapping address/HU sample based on the same multi-stage cluster sample design may yield the greatest combined cost savings for the two surveys.*

ATTACHMENT 1

SURVEY DESIGN SUMMARY

Probability Sampling Portion of General Social Surveys (GSS) Sample [2]

September 2016

Information Sources: [1] http://gss.norc.org/Documents/codebook/A.pdf ; [2] https://en.wikipedia.org/wiki/General_Social_Survey ; [3] https://fcsm.sites.usa.gov/files/2014/05/2003FCSM_keynotespeaker.pdf ; [4] recent personal communication with Tom Smith (SMITH-TOM@norc.org), including partial documentation of the NORC 2010 National Sample, which I received on 9/28/16; and [5] http://gss.norc.org/documents/codebook/GSS_Codebook_AppendixA.pdf .

Organization Now Conducting the Survey: University of Chicago, National Opinion Research Center (NORC) throughout the history of the GSS

Year GSS First Conducted: 1972

Target Household Population = Households with adults (18+ years of age) living in them in the United States (including Alaska and Hawaii) who are able to do the interview in English or (since 2006) Spanish.

Core Mission: The GSS is part of the National Data Program for the Social Sciences (NDPSS), a social indicators, infra- structure, and data-diffusion program. Its basic purposes are to: 1) gather data on American society to a) monitor and explain trends and constants in attitudes, behaviors, and attributes at both the aggregate and individual levels, b) measure both net and gross societal change, and c) examine the structure and functioning of society in general and the role of various sub-groups; 2) compare the United States to other societies to a) place American society in comparative perspective and b) develop generalizable, cross-national models of human society; and 3) make high-quality data easily accessible to all quickly and without charge.

Current Sample Components: A stratified multi-stage cluster sample for face-to-face interviews; see design summary table below

Sample Design and Selection Currently by: NORC sampling staff. However, according to [2], note that NORC and SRC collaborated in producing the GSS multi-stage household sample re-design in 1980 only. Thus, the GSS sample and the SRC master sample would most likely have been similarly structured in that re-design. It is also conceivable that subsequent re-designs of the GSS sample (in 1990, 1993, and 2004) are similar to the SRC national sample designs produced since 1980. The design summary here is of the GSS sample as selected from the 2010 NORC National Sample Design and described in [5].

Data Collection by: NORC field staff

Current Data Collection Frequency: Generally conducted each year through 1993 (except 1979, 1981, and 1992) but on even-numbered years since 1994

Recent Data Collection Timeline: Field operations each round generally run from March through September in recent even-numbered years [4]

Mode(s) of Data Collection: Computer Assisted Personal Interviewing (CAPI) [1]

Data Collection Field Organization: "There is a central office data collection staff, one or two general field managers, about 10 area field managers, and a staff of field interviewers, most often 150-200. We have no sub-contractors." [4]

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[2] The multi-stage GSS sample for several years in the 1970s consisted of two half-samples, one following a fully probability sampling design in which randomized selection is done in each stage and the other doing likewise except for the within-block selection stage where quota sampling was employed. Since 1992 all GSS samples have only utilized a single fully probability sampling design. The GSS sample design described here is for the probability sampling design used in recent years.

GSS SAMPLE DESIGN SUMMARY TABLE

(From [5] unless otherwise indicated; unconfirmed features in *italics*)

Stage	Sampling Units and Frame Source (What is being sampled and from what list or lists?)	Stratification[3] (Stratify by what? Which sample allocation approach?)	Sample Selection (How will random selection be used?)	Sample Sizes and Recruitment (How many were selected and responded? Recruitment plan?)

1	**Primary Sampling Units (PSUs) are either:**
	• NORC calls them National Frame Areas, which are counties, county groups, or metropolitan areas called Consolidated Statistical Areas (CSAs) or Core Based Statistical Areas (CBSAs)
	  • The largest of these are selected with certainty ("certainty PSUs")
	  • The rest ("non-certainty PSUs") are sampled
	
	Frame: Machine-readable file produced by NORC sampling staff
	
	Frame Sizes: Unknown
		• ***Explicit Stratification (of non-certainty PSUs) by:*** *[4]*
		  • *"Urban" or "non-urban",*
		  • *Based indirectly on the percentage of households that are found in Enumeration Areas where block canvassing and mailout/mailback methods are used for the decennial census*
		
		• ***Implicit Stratification (in selecting non-certainty PSUs) by:***
		  • *Primary state with specified sort order*
		  • *% non-Hispanic white quartile*
		  • *Median household income*
			• PPS systematic selection within any explicit strata
			  • Measure of size is most recent count of the number of housing units
			• It appears that a new sample of PSUs is selected by NORC for its master sample (i.e., its "National Sample") after each decennial census, and that each round of the GSS in the subsequent decade uses all or a portion of National Sample PSUs, but a rotating sample of Stage 2 "segments" [4]
				• The same PSU sample is use for each round of the GSS where a NORC National Sample (i.e., its master sample) is used
				• Varies among NORC National Samples selected after each decennial census
				  • 126 PSUs in 2010 sample (38 are certainty PSUs), of which 76 have been used for GSS rounds since 2010
				  • 79 PSUs (24 certainty) in 2000 sample
				  • 80 PSUs in 1990 sample

[3] "Explicit stratification" means that a sample is randomly selected separately within each of the explicit strata. "Implicit stratification" means that the resulting sample is effectively, but not explicitly, stratified when some form of systematic sampling is applied to a strategically sorted frame to assure sample representation of various subgroups formed by the criterion/criteria used to sort the frame; however, unlike sampling from explicit strata, selection is not done separately among the implicitly formed subgroups. Both forms of stratification should be accommodated in the analysis of data from the resulting sample.

GSS SAMPLE DESIGN SUMMARY TABLE
(Continued)

Stage	Sampling Units and Frame Source (What is being sampled and from what list or lists?)	Stratification [4] (Stratify by what? Which sample allocation approach?)	Sample Selection (How will random selection be used?)	Sample Sizes and Recruitment (How many were selected and responded? Recruitment plan?)

2	**Secondary Sampling Units (SSUs):** "Segments defined using either Census Tracts or Census Blocks"
	• In urban stratum: "a tract or an aggregation of tracts" [4]
	• In non-urban stratum: "block group or an aggregation of block groups" [4]
	• In GSS analysis, these are considered PSUs within "certainty PSUs," each of which is considered a primary stratum [5]
	
	Frame: Machine-readable file produced by NORC sampling staff
	
	Frame Size: Unknown
	
	Frame Structure: A machine-readable list of segments is produced for <u>each</u> selected PSU).
		• ***Implicit Stratification*** *of segments in all certainty PSUs combined by:*
		  • *NFA)*
		  • *State*
		  • *County*
		  • *"Principal city indicator"*
		
		• ***Implicit Stratification*** *of segments within each non-certainty PSU by:*
		  • *Quartile for the percentage of non-Hispanic White population*
		  • *Median household income*
			• PPS Systematic Selection
			  • Measure of size is the most recent count of the number of housing units in the SSU [4]
			• It appears that a new sample of segments is selected for each National Sample, and that rotating samples of different segments are used for rounds of the GSS that are conducted in the ensuing decade. [4]
				• Varies among NORC National Samples selected after each decennial census:
				  • A subsample of segments selected for the 2010 NORC National Sample Design, with rotating subsamples of SSUs used in subsequent rounds of the GSS
				  • 1,516 SSUs selected overall for 2010 NORC National Sample, a stratified subsample of 400 of which have been used for each round of the GSS after 2010
				  • 899 SSUs selected overall for 2000 NORC National Sample
				  • 384 SSUs selected overall in the 1990 NORC National Sample Design [1]

[4] "Explicit stratification" means that a sample is randomly selected separately within each of the explicit strata. "Implicit stratification" means that the resulting sample is effectively, but not explicitly, stratified when some form of systematic sampling is applied to a strategically sorted frame to assure sample representation of various subgroups formed by the criterion/criteria used to sort the frame; however, unlike sampling from explicit strata, selection is not done separately among the implicitly formed subgroups. Both forms of stratification should be accommodated in the analysis of data from the resulting sample.

[5] See Benjamin King and Carol Richards, "The 1972 NORC National Probability Sample." Chicago:NORC, August, 1972.

GSS SAMPLE DESIGN SUMMARY TABLE
(Continued)

Stage	**Sampling Units and Frame Source** (What is being sampled and from what list or lists?)	**Stratification** [6] (Stratify by what? Which sample allocation approach?)	**Sample Selection** (How will random selection be used?)	**Sample Sizes and Recruitment** (How many were selected and responded? Recruitment plan?)
3	***Tertiary Sampling Units (TSUs):*** *Part of a block or ED* • *A stage of selection in the 1990 NORC National Sample [1]* ***Frame:*** *Machine-readable file produced by NORC sampling staff* ***Frame Size:*** *Unknown* ***Frame Structure:*** *A machine-readable list of TSUs linked to each selected SSU.*	*None*	• *PPS selection of one TSU per SSU* • *Measure of size is most recent count of the number of housing units*	• *384 overall in the 1990 NORC National Sample [1]*

[6] "Explicit stratification" means that a sample is randomly selected separately within each of the explicit strata. "Implicit stratification" means that the resulting sample is effectively, but not explicitly, stratified when some form of systematic sampling is applied to a strategically sorted frame to assure sample representation of various subgroups formed by the criterion/criteria used to sort the frame; however, unlike sampling from explicit strata, selection is not done separately among the implicitly formed subgroups. Both forms of stratification should be accommodated in the analysis of data from the resulting sample.

GSS SAMPLE DESIGN SUMMARY TABLE
(Continued)

Stage	Sampling Units and Frame Source (What is being sampled and from what list or lists?)	Stratification (Stratify by what? Which sample allocation approach?)	Sample Selection (How will random selection be used?)	Sample Sizes and Recruitment (How many were selected and responded? Recruitment plan?)
3 or 4	**PenUltimate Sampling Units (PUSUs):** • Residential Addresses in TSUs with USPS Address Listings, or • Housing Units in TSUs where Field Listing is Required **Frame:** • Machine-readable vendor listing of residential addresses in areas with access to USPS address lists, OR • Machine-readable field listing by NORC sampling staff in area without access to USPS address lists **Frame Size:** Unknown but varies among TSUs **Frame Structure:** A list of housing units/household addresses linked to each selected TSU.	• None	• *Simple random sampling*	2,200 Housing units selected according to [1]

GSS SAMPLE DESIGN SUMMARY TABLE
(Continued)

Stage	**Sampling Units and Frame Source** (What is being sampled and from what list or lists?)	**Stratification** (Stratify by what? Which sample allocation approach?)	**Sample Selection** (How will random selection be used?)	**Sample Sizes and Recruitment** (How many were selected and responded? Recruitment plan?)
4 or 5	**Ultimate Sampling Units (USUs):** Eligible residents at the selected address or in the listed housing unit **Frame:** A listed roster of survey-eligible residents at the selected address/listed housing unit completed on a household enumeration form **Frame Size**: Unknown but varies among PUSUs	• None	• *Selection of one eligible household resident at random using a "Kish table" [4]* • *There has been no oversampling of African-Americans or Hispanics in ANES since the 1980s. [4]*	• One individual per household • 2,162 survey respondents in 2004 [1]

ATTACHMENT 2

SURVEY DESIGN SUMMARY
American National Election Studies (ANES)
September 2016

Information Sources:	**[1]** http://www.electionstudies.org/studypages/anes_timeseries_2008/CPS_MethodsDisclosure_ANES2008.pdf ; **[2]** http://www.electionstudies.org/studypages/anes_timeseries_2012/anes_timeseries_2012_userguidecodebook.pdf pp. 20-27; and **[3]** recent personal communication with Matthew DeBell at Stanford University (debell@stanford.edu).
Organization Now Conducting the Survey:	Stanford University and the Survey Research Center at the University of Michigan (since 2006), after the Survey Research Center at the University of Michigan (1948-2004) [3]
Year ANES First Conducted:	1948
Target Household Population =	The target population for the 2016 ANES was "English-speaking or Spanish-speaking United States citizens of voting age (implemented as being 18 years of age or older at the time of the pre-election survey) and residing in the 48 coterminous United States and the District of Columbia" [3]
Core Mission:	"To inform explanations of election outcomes by providing data that support rich hypothesis testing, maximize methodological excellence, measure many variables, and promote comparisons across people, contexts and time" [2]
Current Sample Components:	A stratified multi-stage cluster sample for face-to-face interviews, and an address-based sample for web survey interviews; see Sample Design Summary Table below for details on the face-to-face sample component sample. The ANES used "fully independent" samples in the last few rounds, each of which was selected solely for the ANES. [3]
Sample Design and Selection Currently by:	Sampling staff at RTI International in 2008, Abt SRBI in 2012, and Westat in 2016
Current Data Collection Components:	(1) Face-to-face interviews and (2) web survey self-administered interviews
Recent Data Collection by:	Field staff of RTI International in 2008 [1], Abt SRBI in 2012, Westat in 2016
Current Data Collection Frequency:	Every presidential election year. Post-election surveys used to be done in some mid-year election cycles (i.e., 1958-2002), but not in recent years. "There are no plans to do so in 2018." [3]
Mode(s) of Face-to-Face Data Collection:	Computer Assisted Personal Interview (CAPI); and (in 2008) IPAQ handheld computers for rostering and respondent selection within households. Computer-Aided Self-Interview (CASI) was also used in 2012 for sensitive questions. [2]
Recent Data Collection Timeline:	The pre-election survey is conducted between Labor Day and Election Day (not including those days), and the post-election survey is conducted immediately following Election Day and through December
Data Collection Field Organization:	Face-to-face data collection is managed by Westat's central office in Rockville, Maryland. Field interviewers are supervised by regional field supervisors. Field interviewers are Westat employees, though many are temporary employees hired for the project. In 2012 Abt-SRBI field interviewers were subcontractors furnished by another staffing agency, although some of the same interviewers worked on the project. [3]

ANES FACE-TO-FACE INTERVIEW SAMPLE DESIGN SUMMARY TABLE

(From [2] Unless Otherwise Indicated)

Stage	**Sampling Units and Frame Source** (What is being sampled and from what list or lists?)	**Stratification** (Stratify by what? Which sample allocation approach?)	**Sample Selection** (How will random selection be used?)	**Sample Sizes and Recruitment** (How many were selected and responded? Recruitment plan?)

1	**Primary Sampling Units (PSUs):** Census Tracts (CTs
	
	Frame Source: Staff created national listing of CTs from information available from the Census Bureau.
	
	Frame Size: Unknown
	
	Notes: A machine-readable list of CTs.
		• By nine Census Regions in 2012 formed by grouping the 48 contiguous states plus the District of Columbia (Alaska and Hawaii were excluded for cost reasons)
		• In 2012 there were effectively three PSU samples, a main sample, a black-targeted sample, and a Hispanic-targeted sample.
		  • The black- and Hispanic-targeted samples were limited to PSUs with proportions of these groups that were above a threshold
		  • In those targeted samples anyone who was non-black or non-Hispanic was screened out
		• Oversampling was not done in 2016 but had been in the past
			• PPS selection (unclear which specific algorithm was used)
			  • In 2016, each PSU's "measure of size" used for PPS selection is its total number of citizens age 18 or older. [3]
				• Overall PSU sample sizes have varied among recent rounds of the ANES:
				  • 60 CTs in 2016 [3]
				  • 125 CTs in 2012
				  • 84 CTs in 2008.

ANES FACE-TO-FACE INTERVIEW SAMPLE DESIGN SUMMARY TABLE
(Continued)

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2	**Secondary Sampling Units (SSUs):** Residential mailing addresses/listed housing units. **Frame Source:** Based on lists of mailing addresses available from various vendors, based on USPS Computerized Delivery Sequence File. In CTs with less than 70% estimated frame coverage, field staff did a complete listing of all housing units in the CT. **Frame Size:** Number of residential addresses in the segment at the time of listing and available from the mailing address vendor **Notes:** A machine-readable list of household addresses linked to each selected segment	None	A "random subset" of the list of addresses/ housing units is selected	• In the 2016 ANES: [3] • A total of approximately 3,000 mailing addresses were selected to be recruited for participation in the pre-election interview

ANES FACE-TO-FACE INTERVIEW SAMPLE DESIGN SUMMARY TABLE
(Continued)

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3	**Tertiary Sampling Units (USUs):** Survey-eligible residents at sample address/housing unit **Frame Source:** The household roster produced by the field interviewer with the help of a knowledgeable adult member of the sample household **Frame Size:** Equaling the number of eligible residents in each participating household **Notes:** The field interviewer creates a machine-readable listing of all eligible residents for each participating household address	None	The computer used to create the listing of survey-eligible household residents is programmed to "randomly select one eligible person – that is, a US citizen age 18 or older – for the main interview." [3]	• In 2016 the target number of pre-election face-to-face interviews is 1,200, to go with the complementary sample of web survey interviews. [3] • In 2012 ANES the target number of pre-election interviews was 2,000, with about 90% of those completing the pre-election interview also complete the post-election interview. [2] • Monetary incentives ranging from $25 to $125 were offered during the pre-election and post-election surveys.