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Counting Ears: Democracy, Statistics and the Making of the New Deal.

The Great Depression that hit the U.S. in the 1930s was so violent that it destroyed much more than the economy. In October 1929 the sudden explosion of press accounts detailing the stock market crash, bankers jumping out of windows, and the impending collapse of the financial world were extremely worrisome, though contained in New York. Soon afterwards, however, Americans began to hear talk at the local grocery store that workers in their own town were experiencing more and more difficulties finding jobs and feeding their families. And indeed, they could actually see that bread lines had started to form outside of their local relief organization. Many inferred that, along with the financial meltdown, the labour market was completely disorganized. Before long, they began noticing that farmers around town were encountering problems so catastrophic that many were being forced to abandon their farms, and that their own towns began to be overwhelmed by waves of transient farmers coming from unknown places, dirty from the road, who had also been dispossessed. Among these strangers there may have been someone from their own family — maybe an unmarried sister, maybe a brother-in-law with several kids — desperately asking for help. They could not help but to offer to break into their savings at the cost of eating as well as they had before. Here, the impact was personal and caused not only internal anxiety but the eruption of clashes and fights within families. Even these foundational institutions of America — families and consumerism — were decomposing.

So Americans made drastic decisions. The veterans for example, who could no longer live on just their food coupons, marched to Washington DC to ask for a bonus. To see war veterans forced into marching on the capitol for a bare subsistence wage was for most Americans itself quite a shock. Still more shocking, was seeing those very persons who had recently risked their lives in Europe for the good of the Nation receive nothing but bullets fired at them by the same army they had served. Even respect was being corrupted now. This was too much. Therefore, in the hope for a way out of this crisis some Americans sought alternative political solutions, electing socialist and, in some cases, nearly fascist mayors, legislators, and governors. Many commentators openly worried that democracy was endangered. It really seemed that nothing held anymore, that the Depression had completely destroyed all the foundations of America and revealed it to be not much more than “a congeries of disorderly panic-stricken mobs and factions,” as Walter Lippmann wrote in 1933.

The problem was large; but there was an even bigger problem: nobody knew exactly how big it was! While every single American could see the catastrophe with his or her own eyes, there was no ready gauge or tool which would allow a sizing up of the problem for the nation as a whole. This seems incredible today because we now take for granted precisely what this book aims to recount. In 1933 no one had even such basic data as the number of unemployed persons, the number of people lining up for relief, the number of transient

farmers roaming the countryside, nor almost any of the other statistical estimations that the federal government uses today to guide its policies. Even the very definitions of the things to be counted were as yet undetermined: “What is an income, a crime, a gainful worker, an unemployed person, a farm, a family, a strike, a stillbirth, a wage rate, an accident?” the COGSIS (a very important governmental advisory committee) asked anxiously in 1937, without finding any good answer. The old census, invented more than a century earlier for entirely different purposes, had been adequate for measuring certain important socio-demographic variations, such as the size of the population in each state or the average number of persons in a family. Now, however, it appeared completely outdated and far too slow to measure the current emergency situation, especially considering the fast-moving phenomena like massive unemployment that characterized the Great Depression. The same could be said more or less about the remaining statistical apparatus of the State, which felt completely blind. The scale of the Depression was so gigantic and the changes to the country so violent and sudden that no one knew what America looked like anymore, nor even how to take a picture of it!

For these reasons, when the New Deal administration came into power it not only had to abandon prevailing *laissez-faire* economic policies and to invent new ways to intervene in the economy — as is well known — it also realized very quickly that it needed to gather hitherto unavailable data to guide the federal policies it was implementing. How, for example, would it be possible to fight effectively against unemployment without knowing the number of unemployed persons? In addressing this need, the administration experienced, throughout the 1930s, a real statistical revolution. The number of federal statistical bureaus and the amount of statistics they produced grew exponentially and, at the core of this growth, the now well-established method of *random sampling* was developed as the most innovative, precise, and easy-to-use method to produce data. The New Deal was not only an economic experiment, but also an epistemic one, an aspect which has been far less considered.

The goal of this book is first to describe how the New Deal administration became aware of its own need for statistical data and then how it became the locus of the invention of sampling, the statistically refined technique linking mathematical probability to the administration of raw questionnaires.

To reach this goal, we will begin in the rural, agricultural areas and then move to a more urban setting: beginning in the American countryside with the Department of Agriculture which plays a crucial role in this story, then proceeding to the Bureau of Labor Statistics, the Works Progress Administration, and finally to the Bureau of the Census. At the same time, since the academy was also involved in the story, we will also pay a short visit to the London School of Economics before examining the fundamental role played by the Statistical Laboratory of Iowa State University in Ames, Iowa. Although Middletown, Indiana tends to capture all of the glory as an incubator of experimental social scientific knowledge in this period, it was actually stuck in qualitative research. Ames was the real Midwestern town where the United States entered this new era. Over the course of this journey, we will meet famous academics, such as Ronald Fisher, Jerzy Neyman, George Snedecor and Samuel Stouffer, as well as unjustly forgotten ones; we will also meet famous politicians such as Henry Wallace, Harry Hopkins and Frances Perkins, and discover the importance of some of the obscure administrative staff working under them. We show how all these agents interacted to produce the theory and practice of random sample surveys.

It appears, however, that these statisticians ended up being confronted with two complementary but essential tasks concerning the State itself, which lead us to extend the aims of the book in two directions. In doing so, we follow the lesson of John Dewey, who was so influential during the period in arguing that “since conditions of action and of inquiry and knowledge are always changing, the experiment must be retried: the State must always be

discovered” (*The Public and Its Problems*). We follow the bearing of this new kind of knowledge on the rediscovery of the American state itself.

First, as statisticians worked for the federal administration, they wanted data on “the US as a whole” (to use an expression that appeared at the time). Prior to the application of random sampling to such a huge entity, however, a total redefinition, or to be more precise, a total *re-description* of America appeared to be necessary. Indeed, in order to apply the method of random sampling to an entire country it was first necessary to construct what statisticians still call a “universe” or a “population,” a concrete description of the totality under study, containing all its individuals, exhaustively and without repetition. Today, typically, a telephone list is used, but, as one would expect, this list was nearly useless at the time since telephones were still relatively rare. Somewhat surprisingly perhaps, no alternative database with the required properties appears to have existed at the time. There was no “urn” available from which a random sample could have been drawn. Statisticians thus found themselves forced to describe an entirely new entity, “the Nation” without any obvious means for doing so. The task was enormous, but they took it up nonetheless.

In this way, the study of the history of random sampling in turn leads us to explore how it has been possible to scientifically redefine “the US as a whole” during the Great Depression. We then discover that statisticians adopted two different strategies, both described in detail in the book: one in the Department of Agriculture and the other in the Bureau of the Census. As an example, let’s mention that the solution adopted by the Department of Agriculture was based on the use and transformation of an enormous number of road maps — one map per county — precise enough to show the farms that were on its territory; maps that they completed with aerial photographs taken to fill the gaps in counties lacking any good and recent maps. The advantage of these maps was that, thanks to the roads, they constituted a gigantic grid covering the whole US from which small “sample areas” could be selected. We show how statisticians humbly and discreetly replied to public questioning as to the character of the US, providing concrete answers that could be put to use and from which a whole set of fresh and useful information would eventually flow.

Useful to whom, however? Were the government agencies charged with immediate, practical tasks ready to use this kind of data? These questions lead us to a further area to be explored, namely the study of how a new relationship was invented between data producers and their political users. The whole problem rests on the history of the articulation of statistical expertise, especially with respect to the issue of representativity, with democratic government, articulation which we describe in several steps in the book. First, we rediscover that until WWI, what we now call a “representative sample” was in fact a sample of representatives, a group of people elected locally who sent their own observations to Washington D.C. Hence we show that the statistical term “representative” has its origins in democratic theory and practice. Then, we document a long movement, initiated in the 1920s and ending at the end of WWII where, initially, statisticians relied heavily on a certain kind of “participationism” involving the population as a whole and very closely related to Dewey’s pragmatic conception of democracy, before it slowly moved to a new position, that of isolated experts informing the government. This shows how the transformations of the statistical method are related to the transformations of democratic government.

A study of two important and symmetrical transformations allows us capture this move. The first one concerns the relation of statistics to its object. Initially, there was no clear distinction between the enumerators and the enumerated in federal statistics. For instance, in agriculture, the canvasser was one farmer among others, who was chosen simply because he was thought to be one of the most “public spirited”; he was expected to collect the information for all the farms in his area, including his farm: he was an observer including himself in his observations. Similarly, Harry Hopkins’ Works Progress Administration hired

quantities of unemployed white collar workers to perform the social surveys that would inform governmental agencies on the effects of the Depression: the victims would be the ones producing knowledge on the very force that hit them. From these beginnings, we study the eventful and fairly recent appearance of the statistical interviewer, a person who finally was thought to be a disinterested observer.

Second, we show that initially policymakers intended that the data produced be used as much by the population under study as by the government. For example, agricultural statistics were supposed to help farmers themselves sell their products at the real market price. We study how the appearance of a new kind of data meant to be used by a strictly governmental user entirely separated from those it was acting upon transformed this intent. Thanks to their new sampling technique, statisticians in the administration acquired independence from the population as data producer and as data users and became experts looking at the population from above and furnishing objective data to the acting branch on an amazing large array of topics; the count of corn ears and livestock heads (hence the title); endemic diseases; social plagues such as the number of unemployed persons or of transient farmers; and the well known (perhaps too much so) public opinions and attitudes. A former democratic participatory practice, in which the government and its statisticians were themselves resources for popular agency itself, became totally outdated and was replaced by a technocratic government acting upon what has been called by C. Wright Mills the mass society — a society that fits into the grid of the maps but does not participate in government. The development of sampling has been crucial to the development of technocracy and of mass society.

Finally the book proposes to abstract from these arguments on the new population, the new statistical reflexivity and the new kind of government that came out of the New Deal an answer to the question: Of what does America consist? We reject any causal relation between these three levels of analysis and propose to theorize their links in terms of consistency of social aggregates. It is also a way to avoid the term of “representation,” too heavily loaded at the same time by our historical actors and by our contemporary colleagues, and which sounds strange when taken out of the political field and applied to corn ears or diseases. Instead of saying that sample surveys “represent” corn ears in the government, or “are the representatives” of the unemployed in Washington D.C., we argue that they give a certain consistency to these entities and in turn participate in constructing the consistency of America when captured in the flow of a policy. The real title of the book, if it sounded not so weird, should be “Of What Does America Consist of?” It is the story of an epistemic experimentation on America as a whole.

Structure of the book

The sequence of the chapters and flow of argument in the book is as follows: Part I (chapters 1-2) presents the American origins of sample surveys, which initially took the form of crop reporters' estimates that had been produced by the Department of Agriculture since its very creation in 1863. The first chapter presents a snapshot of this method as it was used at the beginning of the 1930s. It begins with a state statistician collecting data in a wheat field in Michigan and continues through eighteen varied and equally crucial steps through which the information collected comes to be incorporated with data originating in other states and time periods. It finally concludes in Washington D.C., where an aggregate figure for the entire nation is eventually revealed to the public. While tracing the long journey of the data from the periphery to the centre, we make explicit the inferences yielded by the method with respect to the rural society it investigated, and, finally, we show how it held very solidly together with a *laissez-faire* conception of the economy. The second chapter shows how the implementation of the AAA and its production quotas during the very first years of the New Deal dismantled this method completely. It illustrates the ways in which statisticians working in the administration were in fact in a very tenuous and ambiguous situation during the period between 1933 and 1935, on the one hand raising high hopes on the part of government officials, and at the same time never meeting the demands or answering the questions addressed to them.

The rest of the book shows how random sampling eventually proved to be the single best answer to all these demands, in two different ways, depending on whether one was focusing on rural or on urban problems.

Part II (chapters 3-6) deals with the development and use of random sampling in the Department of Agriculture. Chapter 3 historicizes the snapshot of the crop reporting method presented in Chapter 1, and shows how, during the first twenty years of the 20th century, statisticians imported the notion of representativity from the political field, where the notion had already enjoyed a very long history related to democratic theories and practices. It provides an example of how, far from being a menace, politics can be a resource for science. Chapter 4 shows how a character now almost totally forgotten, Charles S. Sarle, an employee of the Department of Agriculture, was the first in his administration to militate for, and to use, Bowley's formula of the "probable error." Here, I focus on the act of applying a formula, and argue that it is not a passive or repetitive activity, but can on the contrary be quite an innovative, surprising and even personal one. Chapter 5 describes how after 1936, the Department formed close ties with George Snedecor's Statistical Laboratory at Iowa State University and shows how as a result of this collaboration, a single survey method, stratified random sampling, came into prominence and simultaneously transformed both the administrative division and the academic laboratory. Finally, Chapter 6 describes how the Master Sample of agriculture, an amazingly large sampling frame, was developed in Iowa in the 1940s by aggregating maps of every single county of the U.S., supplemented by aerial photographs where information was missing and by the work of hundreds of young female WPA employees. This random sample was widely used in the Department of Agriculture, to the great satisfaction of the acting branch, first to implement land-use planning projects and then other developmental policies.

Part III (chapters 7-9) leaves the rural fields and moves to the urban context. These chapters explore how sampling surveys blossomed as the only available tool for

measuring the massive unemployment that characterized this period. Chapter 7 returns to the beginning of the 20th century and shows the close similarities, and also some differences, between the first methods used by the Bureau of Labor Statistics and Census to measure joblessness and that used Department of Agriculture for crop reporting. The chapter then explains why, when the Depression began, these old methods proved completely inadequate to the task of measuring the new phenomenon of mass unemployment, so that by 1933 any public estimate generated only controversies and little confidence on the part of the public. At the same time, there was a very strong public appeal — inclusive political with Senator Wagner’s “Three Bills” — to at last measure unemployment. Chapter 8 focuses on an extraordinary political experiment that took place in statistics at the beginning of the New Deal, when more than 11,000 statistical projects representing at the very least 2,500,000 white collar positions for the years between 1933 and 1937 were financed by the WPA as “public works.” We insist on the fact that one of the hopes expressed by the originators of these projects was that those very people victimized by the Depression would be called upon to provide the government with the knowledge necessary for combating it. Then we explain the reasons why these relief workers were ultimately misjudged by professional statisticians who tended afterwards to downplay their significance, even though aspects of their work helped shape what has come to be thought of as the proper role of the canvasser. Finally Chapter 9 shows the role played by random sampling for unemployment specialists in the Bureau of the Census and argues that they developed an ability to switch from one sampling frame to the other, each somewhat inadequate in itself but easily attainable, instead of constructing a huge and tentatively perfect one, as they had done in the Department of Agriculture. Finally, we describe the new kind of relations between a mass society, expert statisticians in the administration, and the government that came out of this process.

In the conclusion of each one of the three parts, we distil several aspects of our theory of consistency. First we deal with the concept of “solidity” of social aggregates, which designates their capacity to resist without transformation to unpredictable events; second we present the process of “expression” of new characteristics within the aggregate, which explains how novelty can also be produced within aggregates; and, finally, we discuss the advantages of the concepts of consistency, as a produce of both solidity and expression, over that of representation in our case.

The book has, in French, 312 pages, 135,000 words, 870,000 characters (including spaces), and 87 illustrations.

The book closest to mine at the moment is Sarah Igo’s *Average American*, but the two books are complementary, not redundant. Although we agree on the importance of statistics at the same historical moment, we have different theoretical commitments, draw on different sources, and make quite different arguments. Mine has more to see with Andrew Abbott’s *Time Matters*, published by the University of Chicago Press.