What can 179 million phone calls indicate about the possibilities for the future of telephone data collection?

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Abstract

Over a year of outbound phone calls on thousands of phone survey research projects, what can we learn from analyzing the outcomes and disposition codes of all the calls put together? How can the existing trends help us with innovative potential solutions for improvement in the future? We explore the disposition outcomes searching for ways to improve sample utilization and connectivity. Particular focus is placed on understanding the major categories of Interviews, Eligible (Non-Interviews), Non-Eligible and Unknown Eligibility (Non-Interview) and how they break down so that technological innovations can be used to improve the contacting process in the future.

Key Words: Disposition codes, Telephone data collection, Individual Based Sampling

1. Summary of the Dataset

The data set comes from a complete list of United States survey research phone calls made at Western Wats from January, 2008 to August, 2009. To gain an overall birds-eye view of what is happening in the phone industry, we chose to analyze the data across thousands of studies and sample sources. Because the calls were not separated by project or by final disposition, typical metrics such as response rate do not apply. However, we do believe that the wide variety in project types, including customer satisfaction, public opinion, political, marketing, recruits, and others, helps us see what is happening across all sectors of the telephone market research industry. The data set ended up containing nearly 179 million calls including almost 5.8 million completed surveys.

It is important to remember when looking at such a conglomeration of thousands of studies that we are not looking at disposition codes in the same way we might for a single project. It should be noted that these records are all the calls – and not just the final disposition on a sample record as you would typically see for an individual project – that will change the way the data is looked at. Essentially what we have is a look at percentages of call outcomes. An overview of the major disposition categories is presented in Figure 1.

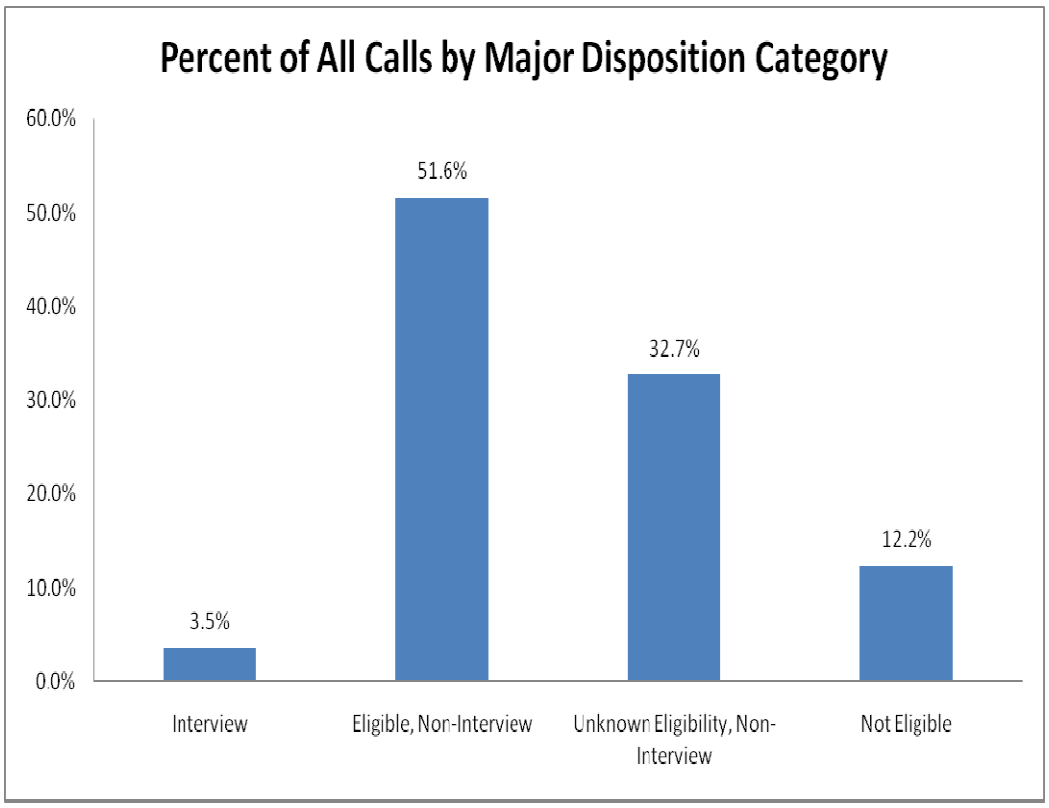

Figure 1: Summary percentages of major categories of disposition codes.

2. Why Analyze This Data

Our industry needs to make a collaborative effort to understand and implement the practices which will provide the best experience for respondents. As research is now coming to respondents through multiple avenues the sheer volume of research opportunities has reached a point where respondents are not part as willing to participate as they were in the past as evidenced in declining response rates (Rockhopper, 2009). Over the decades, technology changes such as answering machines, caller identification and call blocking result in difficulty in reaching respondents (Tucker, 2008).

The US Census Bureau identifies roughly 112 million occupied housing units in the United States (US Census Bureau, 2008) and at just one company, Western Wats among the 179 million calls attempted 75 million unique telephone numbers were included. Just one company has a significant reach into the number of individuals and households being contacted in the country each year. Major issues in the survey data collection industry include cell phone sampling, address based sampling, online data collection, in addition to the continuing impact of falling telephone participation rates and technology barriers in reaching a household such as answer machines, call blocking and caller identification which are forcing the industry to continue to adapt.. We explore new possibilities and ideas that might enhance the survey experience for respondents while being more productive and profitable for researchers.

A major reworking of how a sampling unit of a phone numbers maps to the observation unit of an individual is vital. Many theoretical solutions that might be proposed are not

possible or feasible because of current contractual agreements, ethical considerations and government laws. Of course, Western Wats and other responsible data collection agencies would only pursue those solutions which are legal and ethical and for the good of the research industry in general.

To truly improve the data collection process it should be looked at from many points of view, particularly including how the respondent views the process. Telephone dialing often assumes people are fully attentive, willing and able to respond at the moment they are contacted. We all know the reality is quite different. The calls often come at a time that is less than ideal for an individual. Finding better ways to engage respondents without introducing overall selection bias to a study is a major challenge to the industry.

Looking at the larger category breakdowns for telephone dialing allows an identification of some of the major trends in the industry and an opportunity to think through possible solutions.

3. Interviews

We found that 3.2% of phone calls resulted in a completed survey with another .3% partially completing a survey for a total of 3.5% (Figure 1) of calls resulting in talking with someone who qualified and was willing to participate in the survey. About nine percent of all interviews ended in a partial interview. This would include interviews that were started, got past screeners and then for one reason or another were not completed on that call. For the most part improvements in this section are going to vary project to project but would focus mostly on better training for interviewers, and better questionnaire flow to maintain interest including shortening questionnaire length. One multi-mode possibility might be to give a partial complete the opportunity through an e-mail invitation to go in at their convenience and finish the study, particularly if the lacking questions are relatively simple questions (like demographic information).

4. Eligible, Non-Interview

By far the largest overall category was Eligible, Non-Interview with 51.6% of all calls falling in this category (Figure 1). Certainly answering machines were the most common result of a call with 41.5% (Figure 2) of all calls reaching an answering machine in an eligible household. Another 2.9% of calls resulted in a callback to reach the desired or qualifying individual in the household, and a total of 44.4% resulted in some kind of answering of the phone with the person not available (including answering machines), listed person not available or a qualifying respondent reachable at this phone number but not available at the time of the call. Another 6.5% were reached and refused to participate in the survey. All other Eligible, Non-Interview categories accounted for just .6% the biggest category being language issues.

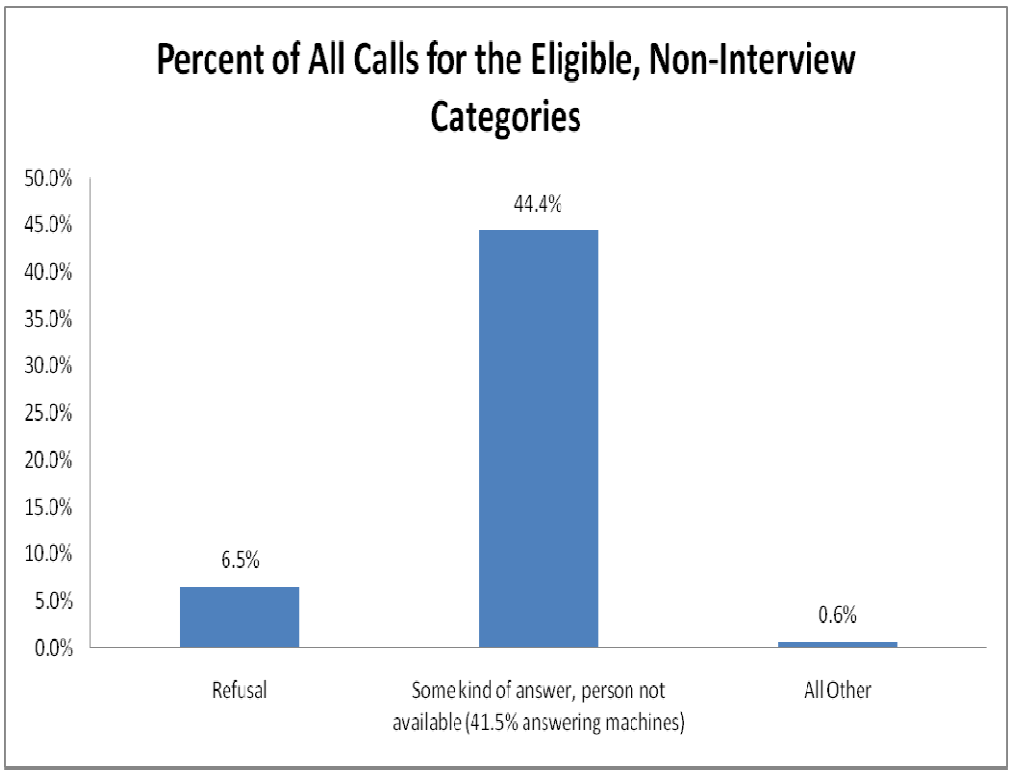

Figure 2: Summary of major categories for Eligible, Non-Interview based on total number of calls made.

The study of whether to leave an answer on an answering machine varies by study type and while there is some variation among clients regarding whether or not to leave a message, for the most part messages are not left on an answering machine when an interviewer encounters one.

5. Unknown Eligibility

The Unknown Eligibility, Non-Interview group accounted for roughly a third of all calls (32.7%) (Figure 1) with no answer being the most common occurring result in this group accounting for 27.3% (Figure 3) of all calls. Call blockers or other devices stopped another 3.1% of calls and 2.2% of calls were busy. Call blockers now exceed busy signals. This growing segment will continue to cause problems inferring telephone surveys to the general population.

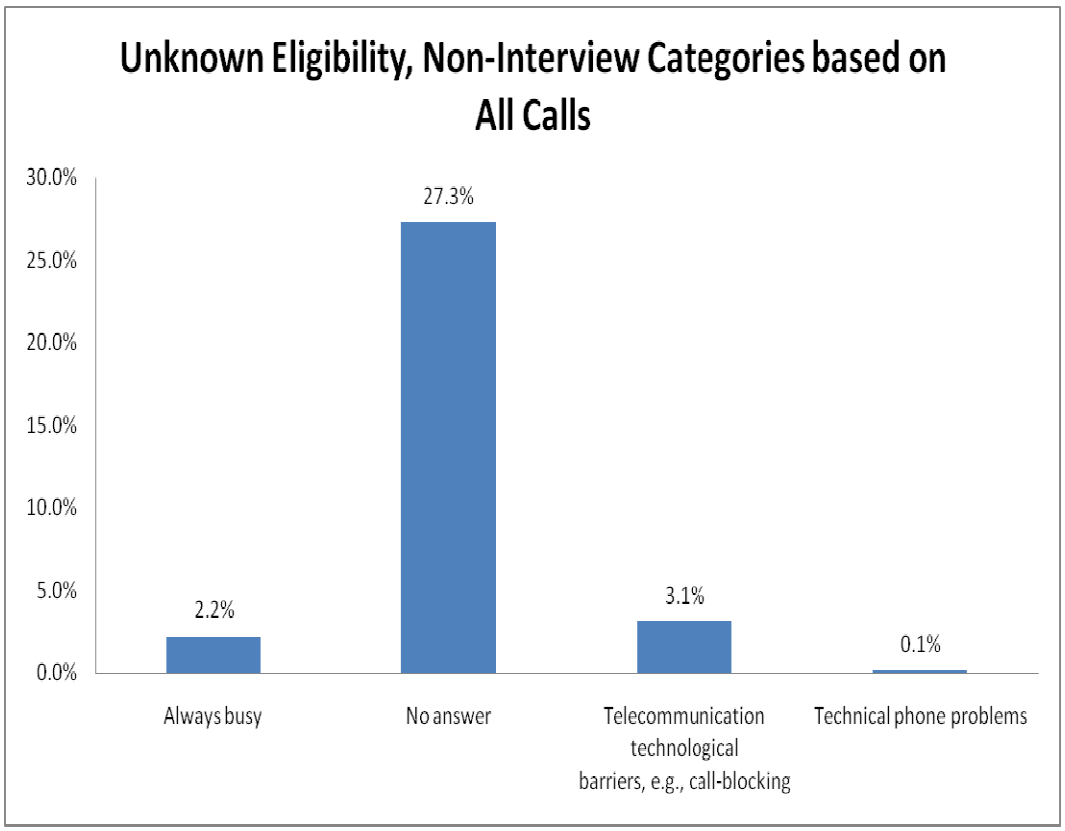

Figure 3: Summary of major codes in Unknown Eligibility, Non-Interview category based on total number of calls.

6. Not Eligible

The final major disposition code group is Not Eligible which accounts for 12.2% of all calls (Figure 1). The biggest group of non-working or disconnected numbers accounts for 9.9% (Figure 4) of all calls, followed by no eligible respondent with 1.0%, non-residence with .5% and quota filled with .2%. While many dialing systems can quickly identify disconnected numbers, the increasing amount of cell phone sample that needs to be dialed must be dialed by hand, meaning these disconnected phone numbers are eating up more interviewer time, which is one reason cell phone dialing is more expensive than landline dialing. Possible solutions might include keeping a disconnected phone number list – particularly for cell phone sample and screening out the numbers that have recently been attempted on other studies but were disconnected. Some knowledge and research on length of time a number is typically disconnected would be needed and there are additional contractual barriers with sample providers that would often prohibit such efforts.

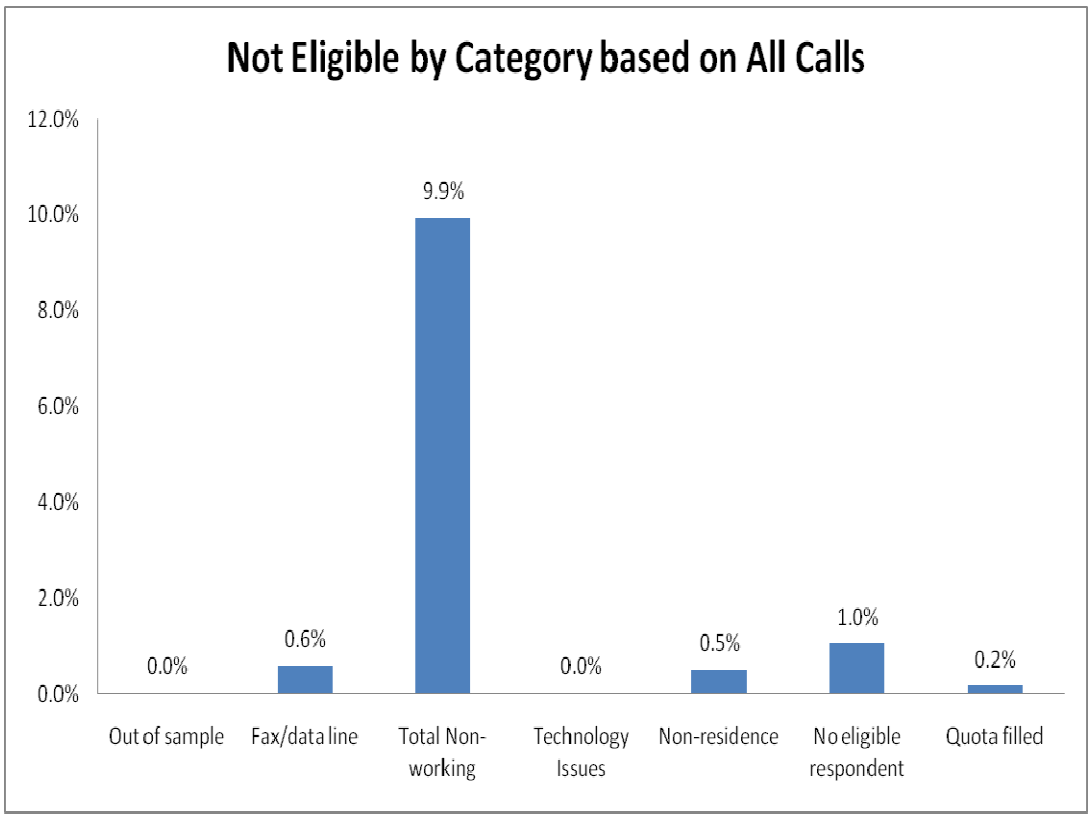

Figure 4: Summary of major categories in Not Eligible code based on total calls.

7. Thoughts & Conclusions

Technology issues have presented major challenges and opportunities to phone data collection. It started with answering machines and caller identification and continued as cell phones began completely replacing landline phones for many individuals. Where a sampling frame of random digit dial telephone numbers previously did a good job of roughly mapping to households we now face major holes in the population with this technology alone. Just sampling cell numbers does not cover the gaps either since most cell phones map individually to a person and many individuals may even have multiple cell phones.

Many researchers are taking advantage of address based sampling (ABS) methodologies which chiefly use the United States Postal Service list of addresses in an attempt to get a better reach of the population. Major efforts to map and match the addresses to phone numbers or e-mails are made to enhance coverage.

Many researchers have been doing online data collection through the use of panels (CASRO 2007). The recession has pushed more research in this direction (Rockhopper, 2009). In this mode individuals are recruited into panels in a number of different ways. Efforts are made to match or balance samples to known population demographics, and while panels are lacking in their ability to produce truly inferable data, many researchers feel they get reasonable information and can track trends despite the theoretical problems of the methodology.

The different options have also enabled mixed mode methodology studies where respondents might have different options on how to participate. Obviously there are differences between methodologies and reasons for using one methodology over another. In a world of declining response rates the arguments for gaining access in any way possible to a potential respondent continue to mount. One advantage of online panels is that a respondent participates at a time they deem convenient.

Many of the panel companies have taken great effort to recruit and maintain large panels, striving to cull out panel members who do not take the survey process seriously. Major efforts are underway to establish quality measures to identify well managed panels and separate them from those who do not produce quality data.

Taking from the panel idea and thinking in a new sphere knowing that 179 million phone calls were made by just one company in a relatively short period of time, the possibility for a wider based concept of Individual Based Sampling emerges. What if the experience of the panel companies could merge with volume of telephone contacts to present something similar to address based sampling but for individuals? Knowing an e-mail address, cell phone numbers and whether the phone was web enabled or accepted text messaging, business numbers and landline phone numbers are all available for an individual. The major problem here is that there is no one source of all individuals in the country that can be accessed like the postal service address lists, but a large database of individuals who could be accessed via phone with tracking of their tendencies and maybe even their ability to say when they could be called could allow for better access to individuals and a more positive experience for the respondent.

Individual based sampling would require consent from the individual, would need to require some remuneration much like the online panels, but could allow for enhanced multi-mode opportunities and greater willing participation from respondents.

In the end, there is still a lot of telephone data collection happening and the marketplace will continue to evolve around the available technologies. The industry will need to use the available information to continue to evolve. Those who figure out the data collection methodologies that make it convenient to the respondents and cost efficient for researchers to collect valid, reliable information will ultimately prove the most successful.

Acknowledgements

A special thanks to individuals at Western Wats who helped compile the information from all telephone projects over the period of time included in this study. Also special thanks goes to all the account managers, sales leads, phone center managers, monitors and editors, data processing, programming, quality assurance that help bring these projects to fruition. None of this would be possible without the thousands of individual interviewers who so patiently and persistently strive to involve respondents in the most professional and friendly way possible. A special thanks to co-author Paul Johnson who is instrumental in moving forward research initiatives. And to all the people out there who are still willing to answer the phone and participate in a survey, thank you all.

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