We the People: U.S. E-Petitioning as Technology-Mediated Social Action

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Abstract

We present the case of *We the People*, an unprecedented national experiment in the use of technology to create a new form of communication between individuals and the White House. We situate *We the People* within the context of the Obama Administration's articulated commitment to "open government." We consider research that has examined similar e-petitioning enterprises in Great Britain and Germany, and on this basis, present a set of data analyses that enable us to compare the US experience with prior research. We find that petitioning behavior in *WtP* is similar in that relatively few petitions attract the majority of signatures and that the majority of petition signing happens early in the life of a petition. However, we also note that understanding national contexts is critical to the interpretation of petitioning activity.

We the People: U.S. E-Petitioning as Technology-Mediated Civic Action

Introduction

On Sept. 22, 2011, the Obama Administration launched an unprecedented national experiment in the use of technology to create a new form of communication between individuals and the US Federal government. *We the People* is a web-enabled petitioning system, which gives users an opportunity to petition the Federal Government for actions of the petitioner's choosing and to obtain a response from the Administration if the petitioner can demonstrate sufficient support for the petition in question (see https://petitions.whitehouse.gov/). A little more than two years after its introduction, it is clear that this petitioning system has entered into the American consciousness in a variety of interesting ways.

We the People (WtP) has been ridiculed in the press for the frivolous and even seditious nature of certain petitions. Petitioners have suggested the creation of a Star Wars-style Death Star (Denby, 2012), requested a day off on December 24, 2012 on behalf of federal government employees, and, immediately following the 2012 election, proposed to secede from the Union in an avalanche of petitions initiated from every state in the union. Ridiculing petitions that appear on WtP has become something of a past-time for political wonks. But it is also clear that some petitions have had substantial effects on Administration decision making. The Obama Administration has credited petitions launched in January 2012 with "crystallizing" their positions on SOPA (Stop Online Piracy Act) legislation then under consideration by the US Congress (Phillips, 2012). On December 21, 2012, the President pledged a national conversation about gun control in response to more than 30 petitions initiated since December 14, 2012, all focused on the topic of gun control motivated by the Sandy Hook elementary school shootings.

More recently, a successful petition advocating public access to research financed with public funds resulted in an Administration response issued in February 2013, announcing that new policy to that effect would be implemented by research funding agencies such as the National Science Foundation and the National Institutes of Health.

E-petitioning is not an entirely novel phenomenon. The use of new technologies to facilitate access to this historical right to petition was introduced in Scotland in 2000, where it continues to function. Building on the Scottish example, and in some cases, using its software, e-petitioning systems have also operated for nearly a decade at the national level in Great Britain, Germany, and Australia. A small amount of research exists that has explored the way that such systems function and their contribution to democracy.

In this paper, we present the case of *We the People*, exploring some of its operations as the United States' unique experience with e-petitioning. We situate it within the context of the Obama Administration's articulated commitment to "open government". We consider research that has examined similar national enterprises in Great Britain and Germany, and on this basis, we present a set of data analyses that enable us to compare the US experience with prior research. We find that petitioning behavior in *WtP* is similar in that relatively few petitions garner the majority of the signatures and that the majority of petition signing happens early in the life of a petition. However, we also note that understanding national contexts is critical to the interpretation of petitioning activity.

From the Historical Right to Petition to Contemporary E-Petitioning

The right to petition government for the redress of grievances can be traced from the Magna Carta in 1215 to Chapter 5 of the British Bill of Rights, promulgated in 1689, which asserts

subjects' rights to petition the king (Kilman & Costello, 2002). Other democracies have built on the British precedent. In the United States, the right to petition government is a civil liberty guaranteed by the First Amendment of the U.S. Constitution, which reads "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances" (First Amendment, n.d.). Kilman and Costello (2002) review the history of court cases that establish the primacy of petitioning over the right to assemble, since assembling in the past was the necessary precursor to creating petitions, and the expansion of petitioning from the limited case of "redressing grievances" to issues that more generally further the interests and prosperity of petitioners and their views on issues of political controversy. Both citizens and non-citizens may petition, and the governmental bodies they can address, beyond the executive and legislature, include administrative agencies and the courts.

Describing the political functions of this right, Newton (2002) views petitioning as a "form of public dialogue in a time before mass media and national political parties." He observes that the act of petitioning historically called to the attention of elected leaders a wide variety of public and private concerns, including unresolved problems, unpopular policies, and instances of misconduct, corruption, and incompetence, thus expressing public opinion without threatening public order. One of the most historically significant uses of petitioning has been by women in the mid-19th century, whose petitions are credited with contributing significantly to the abolitionist movement (Zeske, 2002); at the time petitioning provided women with a form of

public participation in political debate while they were excluded from voting (Theodore, 2002; Zaeske, 2002).

However, the right to petition has always been a form of one-way communication with government; there is no requirement for governmental response. Thus, petitions not satisfactorily addressed might become the basis for protests, organized voting campaigns, and ballot initiatives. The genres of petitioning have multiplied, encompassing "[l]obbying, letter-writing, e-mail campaigns, testifying before tribunals, filing lawsuits, supporting referenda, collecting signatures for ballot initiatives, peaceful protests and picketing: all public articulation of issues, complaints and interests designed to spur government action qualifies under the petition clause...." (Newton, 2002).

Internet technology now makes it possible and indeed commonplace to use the affordances of technology to initiate petitions of all kinds, which has provided contemporary political activists with a new mechanism for collective action. Initially taking the form of electronic chain letters, the invention of the World Wide Web made it possible to host petitions on websites where signatures may be gathered in a central location. Petitioning has become a global mechanism for social action, as described by Strange (2011) who situates the use of "global group petitions" – petitions published online that link hundreds of transnational activist groups around the world in targeting international institutions – within an "electronic repertoire of contention" (Rolfe, 2005), that enables the creation of a collective identity among loosely connected actions of diverse advocacy groups (p. 1250). Organizations such as Move-On and Petition Online, which recently joined forces with Change.org (http://www.petitiononline.com/help/faq) now facilitate the process even more by providing petitioning services; their effectiveness, while not

(to our knowledge) independently evaluated, is evident in successful campaigns to alter corporate policies such as Verizon's unpopular fees for online bill payment and Bank of America's $5 fee for debit cards. Most notably, a Change.org petition is credited with pressuring local authorities in Florida to arrest and prosecute George Zimmerman in the case of slain teenager Trayvon Martin (Lardinois, 2012). Petray (2011) positions the use of e-petitions on sites such as these within a cluster of Web 2.0 technologies that she calls "Protest 2.0" because petitioning is quicker, simpler, and more accessible, mobilizing large numbers of activists who may be fringe members of a movement. She also warns that such petitions exist only in a "digital realm" and their very effortlessness may diminish their effectiveness if regarded as "push button activism" and thus not indicative of strong support (p. 935).

Organizations such as Change.org and Moveon.org have mediated public petitioning when government itself has offered no facility for enabling individuals to engage in direct petitioning, and thus may be viewed as informal, since they are not subject to public law (Lindner & Riehm, 2009). In the U.S., this changed on September 22, 2011, with the formal inauguration of *We the People,* an electronic petitioning tool enabling a new form of public and direct communication between individuals and the White House, unmediated by corporations, mass media, or political parties.

We the People: **Functionalities, Signature Thresholds, and Use**

We the People is a web-enabled petitioning system, which gives users an opportunity to petition the White House for actions of the petitioner's choosing and to gain a response from the Administration, provided sufficient support for the petition can be demonstrated (see Figure 1 for a screen shot of the homepage for *We the People*). From its inception until recently the only way

to access information about *WtP* operations has been through programming a web crawler to "scrape" the *WtP* website at regular time intervals, thus compiling an unofficial collection of data. However, in June 2013, the White House made publicly available both a database of past petitions up to May, 2013, and an Application Program Interface (API) that enables access to petitions after that date. These applications make *WtP* data accessible to academic researchers with certain computer programming capabilities, facilitating the exploration of research questions about how the website is used by petitioners and signers. Below we describe how the website functions, how petitioners achieve a formal response from the White House, and some descriptive information about its use.

Functionalities of *We the People*

New users seeking to initiate or sign petitions must first each create a user account by providing email address, first name, last name, and zip code, the first three of which are required fields. A required "Challenge Question" is used to test whether the user creating the account is a human. An email message is sent to the address provided by the user with a link they must click to verify the email address used to create the account. To create or sign a petition, the user signs in with the password sent to them in the verification email, which can be changed later.

To create a petition, the user clicks on a green tab labelled "create a petition". This brings the user to "Step One" where there is a prompt to "Enter a title for your petition" and a beginning sentence "WE PETITION THE OBAMA ADMINISTRATION TO…" with a text box to the right containing the instructions "finish statement here". Here the user completes the title of their petition in a maximum of 120 characters. There are 39 pre-established issue topics with

checkboxes that allow the user to select up to 3 to describe their petition. If an initiated petition is similar to an existing petition, it/they will appear and the initiator will be asked the following:

> Consider signing an existing one instead of creating a new one. Duplicate petitions on the same topic will result in fewer signatures for each petition. Focusing your efforts on signing a petition that already has signatures increases the likelihood that you'll get a response from the Obama Administration.

The user can either learn more about similar petitions or continue to "Step Two". In "Step Two" the user is asked to enter a description for their petition (maximum of 800 characters) and enter keywords that best describe their petition (comma separated, maximum of 120 character). Text boxes are provided for both. Next is the "Final Step" which allows the user to review, save and publish later, edit, delete, or publish the petition. There is a creation date and a date 30 days after, informing the user that 100,000 signatures are needed by that date. Users are instructed to build support for their petitions, and it is suggested that they use email, Facebook, Twitter, and word of mouth to encourage others to locate and sign their petitions (Sabochik, 2011).

To sign a petition, the user clicks on "Open Petitions" to produce a page that displays all petitions, 20 at a time. At the time of this writing (11/03/13), 72 live petitions existed, however the number of live petitions changes on a nearly daily basis. They are shown in random order, however the user can click on the "Popular" tab and the user will see the petitions that have the most signatures in descending order, still 20 at a time. Users can also filter by issue; when clicked on, the list of 39 issues referenced previously appears with checkboxes and a number next to them indicating how many petitions are related to each issue. The user can also use the "Search" function to enter search terms.

The user can select a petition they may be interested in by clicking the "Find Out More" button located to the right of the signature count. This brings the user to a page containing the

title of the petition and its full text. A date by which the total number of signatures needed to reach the goal of 100,000 appears along with the total signatures the petition has received to date. There is a button that reads "Sign This Petition" and underneath the user is told that by signing the petition, the user's first name, last initial and city and state will be publicly displayed on the petition page. (This is no longer accurate since, without public announcement, early in January 2013, only the first initial of the signer's first and last name appears on the publicly displayed petition page, for reasons that have not been discussed by the White House (Marks, 2013)). The current platform allows basic sharing of petitions, responses and other content on the site via social media platforms like Facebook and Twitter. There is a WordPress plugin to allow site owners to search and embed petitions from WtP into Wordpress. (http://wordpress.org/plugins/we-the-people/). The source code is available on GitHub.

Signature Thresholds for White House Response

Initially, petitioners are required to solicit 150 signatures before their petitions become "live" on the White House website. Petitioners have a total of 30 days to reach a specified petition threshold, which has varied from 5,000 to 25,000 and is now set at 100,000 signatures. A disclaimer on the website states that "Over time, we may need to adjust the petition signature thresholds, but we'll always let you know what the thresholds are". If successful in reaching the threshold, the Obama Administration pledges to issue a formal response; if unsuccessful, the petition is removed from the website. Thus, a relatively few number of petitions become publicly available for further signing, and even fewer of these ever receive a response from the Administration. However, as of January 2013, 162 petitions had received a formal response, representing 2.1 million petition signers. Although we have viewed no official policy to this

effect, it appears that petitions remain live on the WtP website beyond 30 days, continuing to accumulate signatures, until they have received a response. However, petitions that receive a response from the White House, regardless of date, no longer accumulate signatures. Thus, a small number of petitions, to which the White House has issued a quick response, cease to accumulate signatures even though 30 days have not elapsed. For example, 33 petitions related to gun control that were initiated in response to the Newtown tragedy ceased to accumulate signatures following the White House response on December 21, 2012 despite the fact that some of these petitions had, and some had not, achieved the prevailing 25,000 signature threshold.

Description of Use

With the exception of the recent Federal Government shutdown, *WtP* has operated seven days a week, 24 hours a day, since its inception in September 2011, creating a continuously accumulating stream of petitions and signatures, punctuated by occasional White House responses, which may, as referenced previously, be posted very quickly or may also, as is more usually the case, take many months to appear following a petition's successfully meeting or exceeding the existing threshold. Thus any information provided about current usage is bound to be quickly out of date. However, the following snapshots provide some evidence for the observation that *WtP* is becoming a prominent feature of the political landscape. From Sept. 22, 2011 to October 5, 2011, the signature threshold was 5,000, but so many petitions exceeded this threshold that it was increased to 25,000 (Phillips, 2011), where it remained until January 14, 2013 when it was increased to 100,000 (Phillips, 2013). The following data for *WtP* were compiled by the White House at the time the threshold was defined as 25,000 signatures within 30 days. *WtP* reported as of August 29, 2012, there were 2,756,057 total users, 45,901 total

petitions and 3,320,520 total signatures. The top five petition categories were: human rights (11,891), civil rights (9,956), economy (7,197), government reform (6,503) and family (6,297). The most signatures on a single petition was 150,945. Petitions were receiving an average of 406 signatures per hour with 15.2% of the users having signed more than one petition and 112 petitions having crossed the threshold for response with 100 answered as of that date. Among the responding officials were representatives of 20 agencies and departments. Approximately 1.1 million users have received a response. In the only existing data about petition signers (to our knowledge), the White House announced that, of the surveyed signers who received a response to their petitions, 89% said they would create or sign another petition, 78% said the response from the administration was helpful to hear, and 50% said they learned something new (Phillips, 2012).

Data released by the White House in January 2013 documented the number of users who have created accounts on *WtP* at 5,410,525, doubling the number of users since August 2012. Total signatures were 9,178,278, triple the number of signatures since August 2012. *WtP* users are active petitioners: as of January 2013, 141,310 petitions had been launched since the inception of the system, nearly three times the number of petitions (45,901) that had been initiated as of August 2012. These figures suggest an explosion in the use of *WtP*, suggesting that e-petitioning the White House has become very popular indeed.

E-Petitioning as Social and Political Action

In December 2009, the Obama Administration's Open Government Directive instructed administrators of the executive branch to create and institutionalize a “culture of open government” predicated on three principles of openness: transparency, participation, and

collaboration. The Directive instructed federal agencies to create and make public open government plans that would specify the means by which each would increase the "transparency" of government data and engage in participation and consultation processes designed to make boundaries between federal organizations and citizens increasingly permeable. While it is not completely clear that *WtP* was created as a component of this policy, it is instructive to note that the homepage of the *WtP* website (see Figure 1) presents the following quotation from President Obama: "My administration is committed to creating an unprecedented level of openness in government. We will work together to ensure the public trust and establish a system of transparency, public participation and collaboration. Openness will strengthen our democracy and promote efficiency and efffectiveness [sic] in government" which is taken from the President's Memorandum on Transparency and Open Government, issued on January 21, 2009 (Obama, 2009). However, the use of electronic petitions to facilitate communication between residents of a country with government substantially pre-dates the U.S. Open Government policy. Space does not permit a thorough review of each currently existing system, but a brief description of some of the oldest among them will be useful.

Beyond a set of e-petitioning examples at the level of local government, Bochel (2012) describes e-petitioning systems in use by the Scottish Parliament as of 2004 (http://www.scottish.parliament.uk/gettinginvolved/petitions/), the National Assembly for Wales in 2008, and two experiments in Great Britain, the first entitled *Number 10 Downing Street* was initiated by the Labor Government in 2006 and subsequently scrapped by the Coalition Government in March 2011, and the second entitled *e-petitions* (http://epetitions.direct.gov.uk/), which was introduced by the Coalition Government in July 2011. These systems are situated

within the context of more general trends in the United Kingdom to encourage participation by government through a variety of mechanisms (including citizens' panels, workshops, online chats, etc), as well as an effort to improve the policy making process by involving citizens and users.

How are e-petitioning systems received? Do their users perceive that they have participated in democratic action? These are difficult questions to answer. Researchers make the point that the design and procedural requirements of each system are significant factors in how the system is experienced by its users, along with the political and policy making context in which the systems are situated, and the nature of the petitions themselves (Bochel, 2012; see Lindner & Riehm, 2009 for a comparative examination of e-petitioning system features).

Petitioning systems often stipulate that petitions must reach a threshold level of signatures before the government promises to take some action. For the British Coalition Government petitioning system, that threshold signature level is now set at 100,000, at which point successful petitions must be adopted by a Member of Parliament who is willing to sponsor a debate on it. Failing that, the petition does not advance. According to Bochel (2012), by the beginning of 2012, eight petitions had reached that 100,000 level and debates had taken place on five topics related, but not identical, to the petition topics. She reasons that for the signers of petitions that fail to make their minimum, a majority of participants, the system enables them to air their views but with “little or no 'real' participation or empowerment” (p. 7). Of course, whether or not participation has taken place may well reside in the eyes of the petitioners and signers. Unfortunately, information related to perceptions of users about either British system does not appear to be available.

The Scottish Parliament's e-petitioner system has been functioning since late 1999, and follows a somewhat different set of procedures. In this system, there is no threshold that petitions must achieve for consideration. Instead, each petition is examined by a Public Petitions Committee that determines whether to consider a petition, and if so, what action to take (Macintosh & Malina, 2002). Petitioners are able to provide extensive background information about their petitions; the system enables comments to be made in an integrated discussion forum; petitioners have a six-week signatory phase for the collection of signatures, and petitioners receive feedback about the status of their petitions. This system was evaluated in 2000-2001 (Malina & Macintosh, 2001), finding considerable support from systems users who appreciated "the opportunity to be included in what was viewed as more democratic interaction" (p. 7).

With the Scottish e-petitioning system as a role model, the German Federal Parliament piloted an e-petitioning system in 2005, and, achieving broad support, decided to continue it in 2007 (https://epetitionen.bundestag.de/). Similar to the Scottish system, the German system also relies on a petitions committee, which decides whether or not to allow an e-petition to go public (if it has general political appeal), and then pledges to hold public sessions to consider petitions that achieve 50,000 or more signatures (Lindner & Riehm, 2009; 2011). Public petitions have six weeks to achieve their signature threshold, and are supported by moderated online discussion forums. Although much of the research evaluating this system appears in German, Lindner and Riehm (2011) present data comparing traditional petitioners with e-petitioners, finding that while both groups tend to be men, highly educated, more frequently disabled, and more political engaged, e-petitioners tend to be younger, even more highly educated, and more likely to participate in a broad range of activities associated with political engagement, such as party

membership, membership in trade unions or professional organizations, participation in public protests, support of signature campaigns, as well as contacting media and elected representatives. The authors note that they regard e-petitions as a "success story" (p. 20) since the number of public e-petition submissions and newly registered users are both increasing, along with demands for making petitions public (Lindner & Riehm, 2011).

E-Petitions as Big Data

A user-based evaluation of WtP has not yet taken place; thus, apart from data generated by the White House surveying petition signers that have received a response, there is no information about how petition initiators and signers view their activity. However, the data generated by petitioning itself and signing activity on the website offers some interesting points of departure for analysis. Studies of the German and British e-petitioning sites focus principally on the digital traces of petitioners and signers, exploring these behaviors in an effort to advance our understanding of online collective action.

Hale, Margetts, & Yasseri (2013) and Jungherr and Jurgens (2010) begin by noting that e-petition data such as this falls within the relatively new category of "big data." This is partly because the data streams generated by petitioning behavior are very large and growing substantially over time. But equally important, e-petitioning data tracks human action of an entirely new kind, representing transactional audit trails documenting what individuals have in fact done, rather than their recollections of behavior or responses to a researcher (Bail, forthcoming). Big data also consists of entire populations of behaviors, rather than samples, which, according to Mayer-Schonberger & Cukier (2013) argues for new approaches to data analysis that fall outside the boundaries of usual social science, which relies heavily on

traditional sampling assumptions. A new "computational social science," in which social scientists partner with computer scientists to manipulate very large data sets in exploring the social implications of these new behaviors, may be emerging in response to these challenges (Giles, 2012; Lazer, 2009).

Our Research Question

It is fair to argue that each government petitioning system is *sui generis*, given that it functions with its own software, functionalities, rules for system use, and is inevitably tied to the politics, conventions, and customs of the host nation. However, we wondered if there might be any commonalities in the petition and signature generating behavior on such sites, using the British and German cases as comparisons. Thus, we undertook a descriptive analysis of petition producing and signing behavior, taking up some of the questions pursued in past research.

Jungherr & Jurgens (2010) analyzed data produced on the German e-petitioning platform that appeared between October 14, 2008 and January 19, 2010, with a 50,000 signature threshold in order to elicit a response. They explored the nature of signature dynamics, presenting a series of analyses describing signature distributions for the petition set. They found evidence to support the claim that the vast majority of petitions attracted very few signatures; only 14 in their subset of 886 petitions were able to attract over 10,000 signatures within a 6 week period. In examining the distributions of these 14 petitions, they found no systematic evidence of skewness in one direction or the other, thus suggesting that some some petitions tended to gather most of their support in the earlier days of the signing period while others attracted their support later.

Hale, Margetts & Yasseri (2013) analyzed data appearing on the *Number 10 Downing Street* site website from February 2009 to March 2011, a subset of data on the system as a whole

featuring 8326 active petitions, of which only 534 (6%) were able to achieve the threshold of 500 or more signatures. They similarly explored issues of signature success, and patterns of signature distribution. However, they found that nearly all of the successful petitions achieved their thresholds quickly with a mean of 8.4 days to reach 500 signatures, based on their analysis of skewness and kurtosis scores, found that most of the petitions showed evidence of leptokurtic distributions. They also explored the distribution of signatures across categories of petition topic, finding that petitions in the Health and Environment categories tended to draw more signatures than petitions in the Government, Politics and Public Administration category.

Thus, in the remainder of this paper, we present an exploratory descriptive analysis, designed to develop some initial data about the nature of petition initiation and development in *We the People*. We posed the following research question: ***What descriptive information can be provided about WtP petitions and the distribution of signatures that they attract? How do these patterns compare with those of petition analyses for the British and German experience?***

Method

The data used for this study were obtained from a White House database containing information about all petitions publicly available on the *WtP* website between Sept 22, 2011 and April 30, 2013 (see https://petitions.whitehouse.gov/developers). This database provides petition identification numbers, petition titles, supporting texts, 3 topic categories selected by initiators, as well as signature counts for each day that a petition was live on the *WtP* website. Since we expected that changes in the prevailing signature threshold might motivate different levels and types of behaviors, some analyses below consider only those petitions initiated from October 4,

2011 to January 14, 2013, during which the petition threshold was 25,000, and that satisfied the initial condition to achieve 150 signatures required to go public on the White House website.

Data Analyses

Petition Data and Signature Dynamics

We began first by looking at petitions that appeared on the *WtP* website between September 22, 2011 and April 30, 2013. That data consisted of 1806 petitions that had achieved the 150 initial signature threshold. Of these, 14 petitions achieved over 100,000 signatures. An additional 21 petitions registered over 50,000 signatures but fewer than 100,000, and an additional 102 petitions registered more than 25,000 signatures but fewer than 50,000.[1] The histogram presented in Figure 2 displays this situation graphically: the vast majority of petitions accrue signature totals between 0-9999, while far fewer petitions attract substantially larger totals.

Since the signature threshold varied during this period of time, we proceeded to examine more closely only those petitions that appeared after the imposition of a 25,000 signature threshold and before the imposition of the 100,000 signature threshold, that is, those that appeared publicly on the White House website between October 4, 2011 and January 14, 2013. Of these, 1107 petitions achieved the initial 150 signature threshold and were publicly available on the WtP website. Within this group, 97 reached or surpassed the 25,000 signature threshold within the 30 day limits (8.7%), including 5 that surpassed 100,000 and 10 that surpassed 50,000 signatures.

In an analysis similar to Jungherr & Jurgens (2010), we examined the signature totals across all days of this time span, with special interest paid to a group of 12 petitions that had achieved

1 Since some of these petitions had not yet received a response from the White House, they continued to accumulate signatures beyond those registered within the 30 day period time limit to achieve their threshold.

totals well beyond the threshold at different points. The list of petition titles[2], their launch dates, and their signature totals are displayed below.

Petition Title	Date of Petition Launch	30 Day Signature Total
Legally recognize Westboro Baptist Church as a hate group.	12/14/12	316,301
Immediately address the issue of gun control through the introduction of legislation in Congress.	12/14/12	197,073
STOP EXPANDING TRADE WITH VIETNAM AT THE EXPENSE OF HUMAN RIGHTS	2/7/12	142,688
Peacefully grant the State of Texas to withdraw from the United States of America and create its own NEW government.	11/9/12	119,094
Deport British Citizen Piers Morgan for Attacking 2nd Amendment	12/21/12	109,334
Investigate the IRS Tax-Exempt Status of the Westboro Baptist Church	12/16/12	78,465
Remove the Westboro Baptist Church's 501(c)(3) tax-exempt status, and make it retroactive.	12/16/12	72,807
Recount the election!	11/10/12	64,882
We ask President Obama to support law abiding gun owners in this time of tragedy.	12/16/12	57,670
The East Sea - a FALSE history in our textbooks!	3/22/12	51,479
Federally Legalize Marijuana	11/8/12	31,756
Support mandatory labeling of genetically engineered foods (GMOs).	4/12/12	30,731

In Figure 3, signature totals for these petitions are arrayed against the backdrop of the ongoing signature accumulation contributed by all other active petitions at the same time (the "rest" in

2 Whenever petition titles are presented, they are taken verbatim from their initiators on *We the People*, including the use of capitals and all punctuation.

black). Thus, it is visually apparent that from approximately February 2012 , with the launching of the petition to stop expanding Vietnam trade, petitions attracting higher signature levels tend to be associated with increased levels of signing for the "rest" of the petitions. One sees this effect with the East Sea petition launched in March 2012 and the labeling of genetically engineered food in April 2012. The tendency becomes quite marked beginning in November 2012 with a flurry of petitions that focused on recounting the election, the secession of Texas, and legalization of marijuana. It is particularly interesting to see that, during this activity, the Genetically Engineered Food petition in support of mandatory labeling, which had been launched and had attracted 30,731 signatures in April and early May of 2012 within the 30 day limit and thus surpassing the threshold (but had not yet received a White House response), reignited in November, attracting an additional 11,452 signatures over a period of 7 days. In December and January the general trend continues with a set of 3 very active petitions aimed at the Westboro Baptist Church and many petitions focused on gun control (for and against).

Petition Data and Signature Distributions

Following the British and the German study, we next examined the signatures across the 30 day period of time for each of the 97 successful petitions, in an effort to characterize the shape of their distributions. We removed from this analysis 11 petitions that received responses from the White House prior to the completion of the 30 day period since these petitions' distributions would have been truncated. We computed values for skewness and kurtosis[3] for each of the remaining 86 successful petitions; for each statistic, values of 0 are considered to be characteristic of normal distributions. Skewness values that exceed 0 are those with the bulk of

3 For ease of interpretation, we used a measure of "excess kurtosis" computed by Excel, which subtracts 3 from the kurtosis score.

the data on the left, and a long right tail; values less than 0 indicate that the bulk of the data is on the right side, with a long left tail. Kurtosis values describe the shape and height of a distribution; values that exceed 0 are indicative of a leptokurtic distribution, which features a sharp high peak, and tails that are thinner. Values less than 0 are characteristic of a platykurtic distribution, with a peak that is lower and broader, and tails that are fatter.

The petition skewness values ranged from a high of over 4 to a low of .284. Three petitions exceeded a value of 4, 33 exceeded a value of 3, 28 exceeded 2, and 14 exceeded 1; none of the skewness values were negative. The kurtosis values ranged from a high of over 20 to a low of -1.61. One petition exceeded a value of 20, 32 exceeded a value of 10, 40 exceeded a value of 1, 6 exceeded 0, and 7 were negative. This suggested we would see signature distributions loading heavily at earlier points in the 30 day time period, tending to assume leptokurtic shapes.

Figure 4 presents 6 graphs of distributions that illustrate these qualities. The first three petitions achieved the highest scores for both skewness (over 4 in all cases) and kurtosis (over 19 in all cases). Note that the signature counts are scaled differently on the Y axis to reflect the differing extremes in signature accumulation. In Figure 4A, we see a right-tailed leptokurtic distribution with a skewness value of 4.26 and kurtosis of 19.47; in Figure 4B, we see a leptokurtic distribution with several spikes (skewness = 4.18; kurtosis=19.41), and in Figure 4C we see a leptokurtic distribution (skewness=4.59, kurtosis=23) with several spikes on the left, then a long gradual tail on the right leading to a particularly large spike on the extreme right (the East Sea petition did indeed accrue over 20,000 signatures on the last of the 30 day period). Figure 4D presents a petition with a skewness score of .29 and a kurtosis score of -1.61, producing a platykurtic distribution, characterized by a low broad peak that remains within a

range of 1000-2000 signatures for nearly 16 days. Figure 4E presents another platykurtic distribution (skewness=.28, kurtosis=-.74). Finally, Figure 4F presents a petition with a near normal distribution characterized by a skewness value of .27 and kurtosis value of .33.

Although the distributions were overwhelmingly right-skewed, the graphs made it clear that spikes could also take place at other points in 30 day time period. Thus we used regression analysis to explore how signature accrue at points of time across 30 days. Using the entire sample of 1107 petitions, we constructed independent variables defined as petition days divided into blocks of 3 days each (there were 9 of them, accounting for 27 days of the 30 days); our dependent variable was the 30 day signature count. We computed a step-wise regression with each block of three days entered at each of the 9 steps of the analysis.[4] Table 2 presents the results of this analysis. Each of the regression steps produced a significant F value with $p < .001$. More interestingly, the Table displays the adjusted R square for each step of the analysis, demonstrating that 89% of the variance in the 30 day signature count was accounted for by the first 9 days of the 30 day period, with the remaining 11% distributed over the last 21 days of the period. Thus, it is clear that petitions tended to register the vast majority of their signatures in the initial days of public viewing on the White House website.

Analysis of Petition Categories

As indicated earlier, each petitioner was able to select a first, second, and third topic category from 39 topics made available on the website. We analyzed the first topic category choices of petitions initiators using all 1107 petitions in the sample; Table 2 displays the distribution of issue topic choices. More than 25% of these focused on Civil Rights, followed by 6.87% attributed to Criminal Justice and Law Enforcement, and 6.05% attributed to Budget and Taxes.

4 Note that including all 30 days in the analysis would predict the dependent variable perfectly.

Three petitions garnered over 4% of the choices: Human Rights, Economy, and Foreign Policy. Six petitions attracted over 3% of the choices, which were Defense, Family, Government Reform, Education, Health Care, and Firearms. The remaining petitions each accounted for 2% or less of the category choices; three categories registered no choices. We computed a chi square goodness of fit test assessing whether the observed proportions of category choices were consistent with a hypothetical distribution in which the choices would fall equally across all 39 categories. As might be expected, the chi square (df=35) was significant at 2698 (p = 0).

In an effort to determine if petition category was related to signature accumulation over 30 days, we computed an ordinary least squares regression with signature count over 30 days as the dependent variable and the twelve highest issue categories as independent variables (using dummy variables for each topic, with 1 indicative of category choice and 0 indicating no choice). The results are presented in Table 3. The equation was significant, but accounted for a small percentage variation in the signature count (R square = .0173). It was apparent that the petitions in the Civil Rights, Government Reform, and Firearms categories were associated with higher signature totals over their respective 30 day periods (as indicated by significant coefficients), in comparison with petitions in other categories. We also computed a logistic regression using the same independent variables and Response by the White House (up till April 30, 2013) as the dependent variable. These results are also displayed in Table 3. The equation was again significant, and indicated via significant coefficients (all of which were positive) that petitions in the categories of Criminal Justice and Law Enforcement, Defense, Government Reform, Education, and Firearms were significantly more likely to have received a response from the White House (or relevant federal government agency leaders) by April, 2013.

Discussion

Our analysis sought to describe several aspects of use of the US *WtP* e-petitioning system, with comparison, when possible, to data produced by British and German researchers analyzing their respective country's e-petitioning systems. We find similarities as well as differences present in our data. First, with respect to signature counts associated with petitions, we find an effect similar to that discussed by both Jungherr & Jurgens (2010) and Hale, Margetts, & Yasseri (2013) in that the majority of the U.S. petitions attract relatively few signatures, with a small percentage of the petitions drawing the most signatures and achieving their thresholds. As the German and British researchers also point out, in contrast to a normal distribution, such results support a "power law distribution," a phenomenon common in Web-related activity (see for example Shirky, 2008), which suggests that small numbers of events or people are associated with the greatest amount of activity. Indeed, since petitions in *WtP* require 150 signatures before they go live on its website, the number of petitions achieving their thresholds is even fewer than the 8.7% of those that are successful after having made it onto the website.[5]

Figure 3 graphically displays the explosion of activity in *WtP* that took place in the last two months of 2012 and continued into the first half of January that is suggested by the White House statistics provided in January 2013. The US national election in November and the Sandy Hook elementary school shootings in mid-December each stimulated the creation of what were ultimately very active petitions. In November, petitions to recount the election, allow Texas to secede, and legalize marijuana were associated with a huge spike in petition signing. In December, the introduction of over 30 petitions related to gun control (responded to by President

5 It is not possible to compute this percentage since only petitions that appeared on the *WtP* website are available in the White House database.

Obama and then removed from further signature accumulation within one week), three petitions in opposition to activities of the Westboro Baptist Church,[6] and an additional petition advocating the deportation of CNN newscaster Piers Morgan were associated with another substantial and continued spike of petitioning activity into the new year. This suggests the possibility that individuals who come to the website to sign one of these popular petitions remain on the site to sign other petitions, as would seem to be indicated by the renewed signing activity in November of the petition supporting mandatory labeling of genetically engineered foods. Jungherr and Jurgens (2010) used time series analysis to explore whether certain pivotal petitions in Germany might be said to "cause" increases in other petition activity, an analysis that we will pursue in the future.

In contrast to the German example, our data exploring the timing of petition signatures and the shape and positioning of the signature distributions supports Hale, Margetts, & Yasseri's (2013) claim that, in the life span of a petition, the greatest number of signatures are amassed in the first few days. Indeed our finding that 89% of the variation in signature accumulation can be explained by the first 9 days of the 30-day timespan substantially mirrors their finding of a mean 8.4 days to reach the British 500-signature threshold for the *Number 10 Downing Street* system.

Our analysis of the category data must be cautious indeed. Hale, Margetts & Yasseri (2013) found that petitions in the categories of economics and finance, employment, environment, health, and leisure were predictive of signature counts, and petitions in the category of government, politics, and public administration were inversely related. In contrast, our data indicated that petitions in the categories of civil rights, government reform, and firearms were

6 Shortly after the shootings, the Westboro Baptist Church announced that it would picket the funerals of victims of the shootings, continuing its tradition of using funeral picketing as a protest tactic.

associated with higher signature counts over 30 days. It seems most likely that the topics related to petition signature counts will be those that are currently controversial for the country in question. We also found that petitions in some categories were more likely to be associated with an existing White House response, but it is difficult to say why this might be the case. It may not be difficult to understand why Firearms petitions were more likely to have received a Presidential response in December 2012, but why petitions in other categories had also received a response is not as clear. Most importantly and tellingly, one had to know what happened in the U.S. during December 2012 to make sense of this data point.

This concern reflects a larger issue with the analysis of e-petition data. As others have pointed out, analysis of the datasets now viewed as "big data" and produced as the digital traces of human beings interacting with their technology systems is fraught with complexity (boyd & Crawford, 2012). As Bail (forthcoming) has suggested, the amount of data can be overwhelming; its analysis often requires both programming skills to manipulate and statistical skills to make sense of. In our work, it has become clear that definition of the data set is as much a part of the analytical problem as the statistics. Moreover, the data themselves exist without substantial encompassing context. There is little to explain the patterns of activity that characterize e-petition signatures. The conditions, events, and/or other behaviors that may constitute explanatory factors must be found elsewhere. Indeed some of the most interesting challenges in analyzing e-petitioning lie ahead in uncovering the various social actions that petitioners use elsewhere on the net to attract signers to the petitions they have launched.

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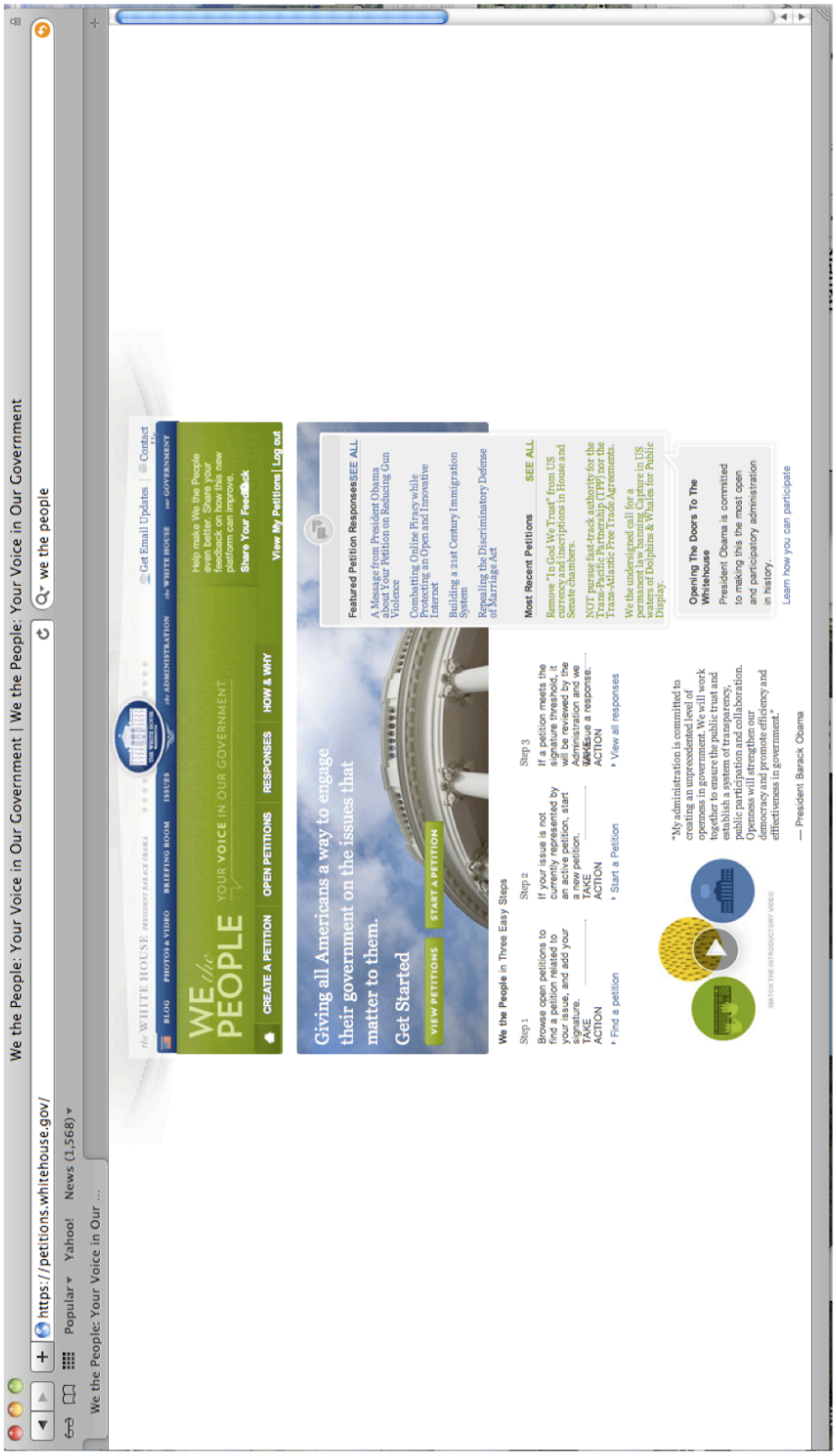


Figure 1: Screen Shot of Homepage for *We the People*

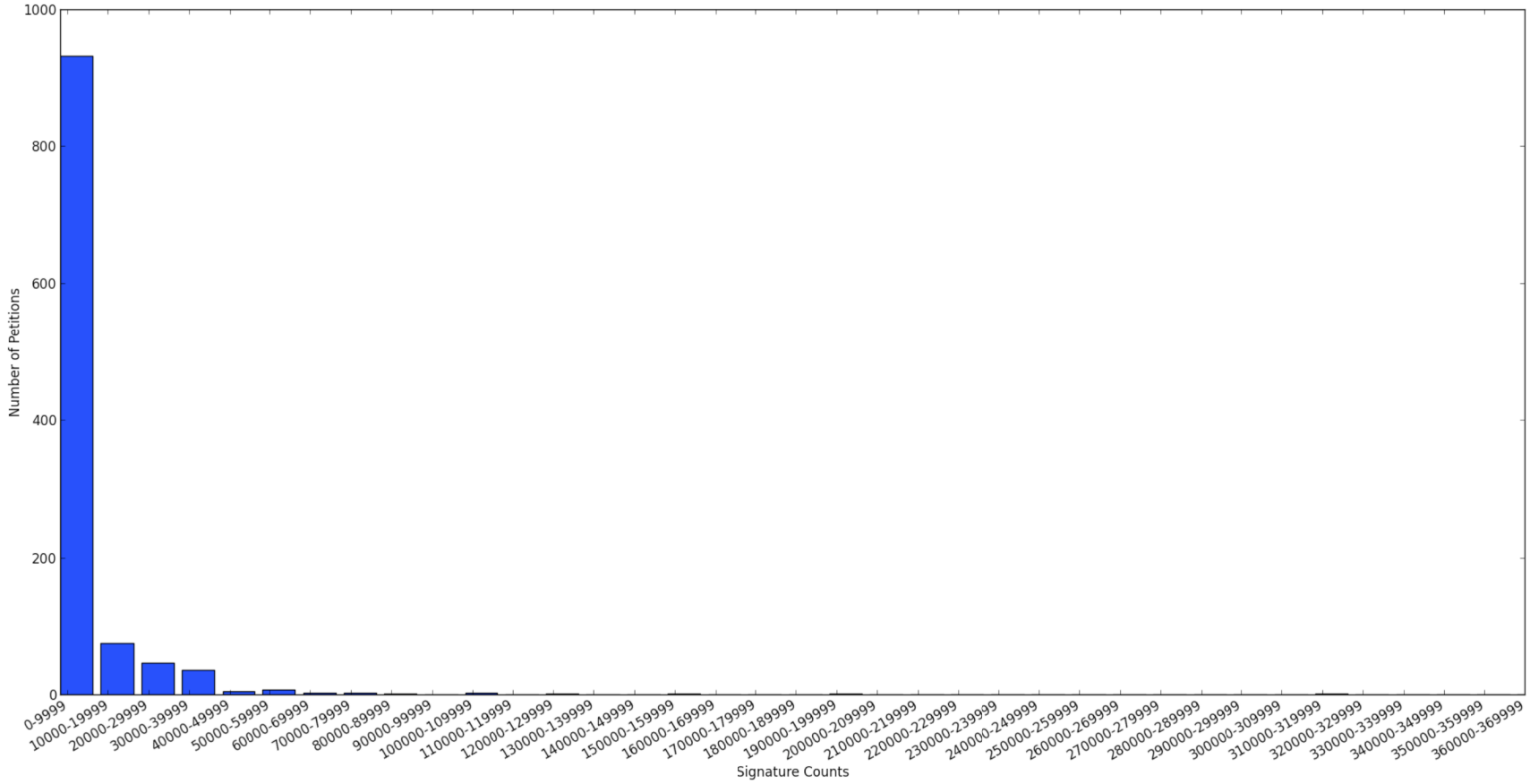


Figure 2: Histogram of Petitions by Signature Counts

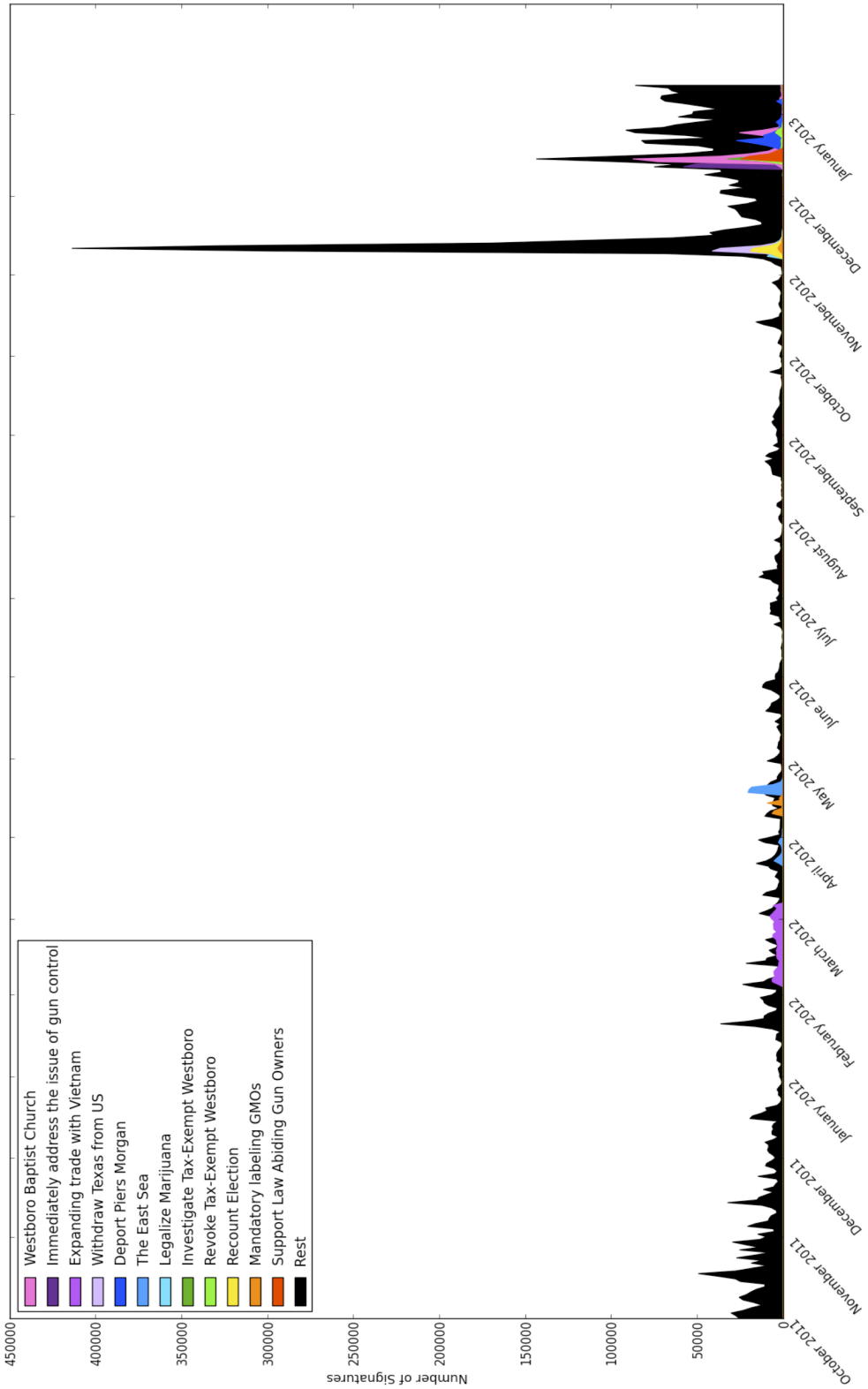
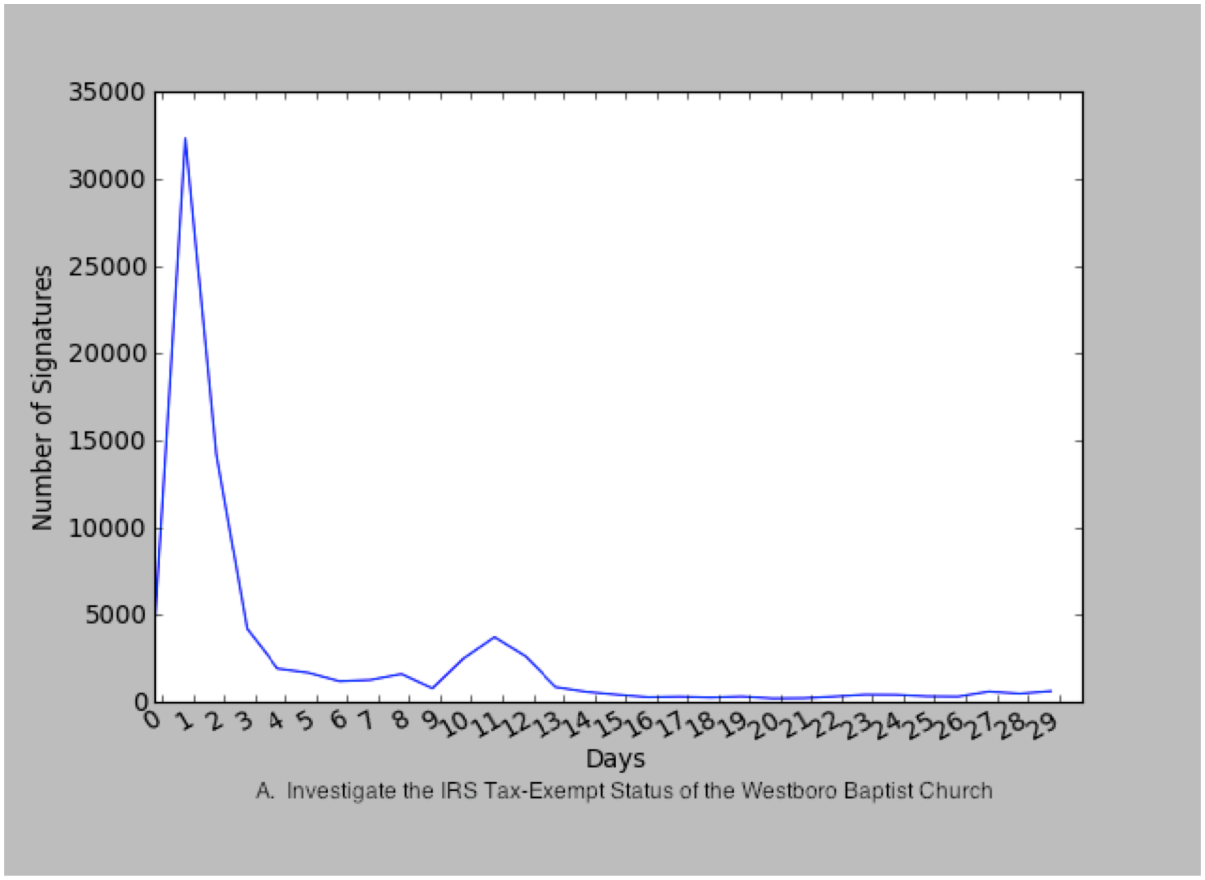


Figure 3: Longitudinal Display of Daily Signature Counts;
High Signature Petitions Foregrounded in Color



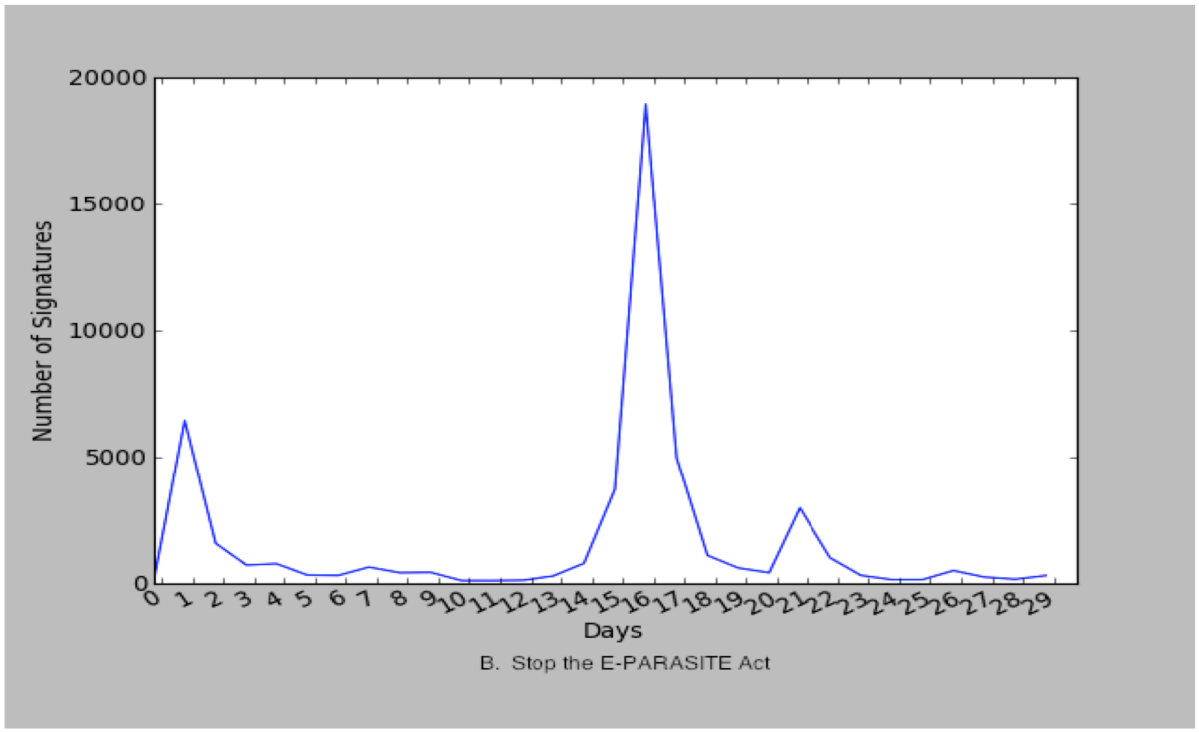
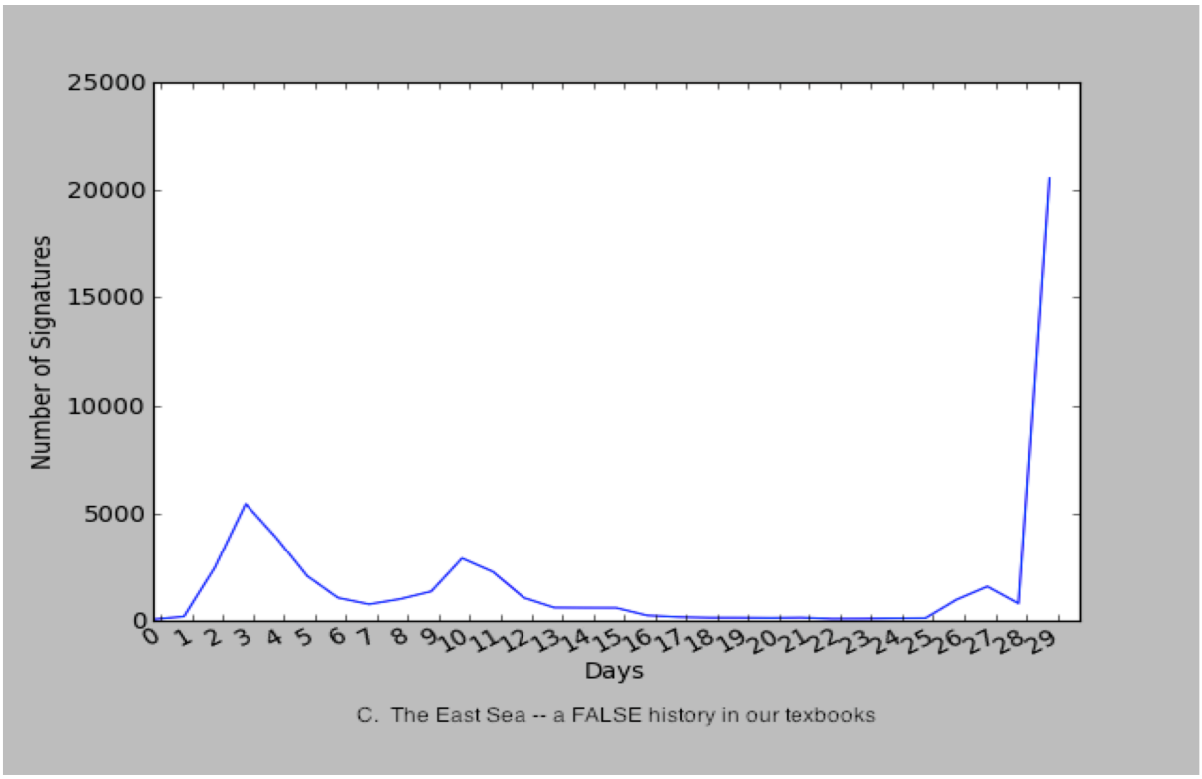


Figure 4: A. Leptokurtic Distribution B. Leptokurtic Distribution



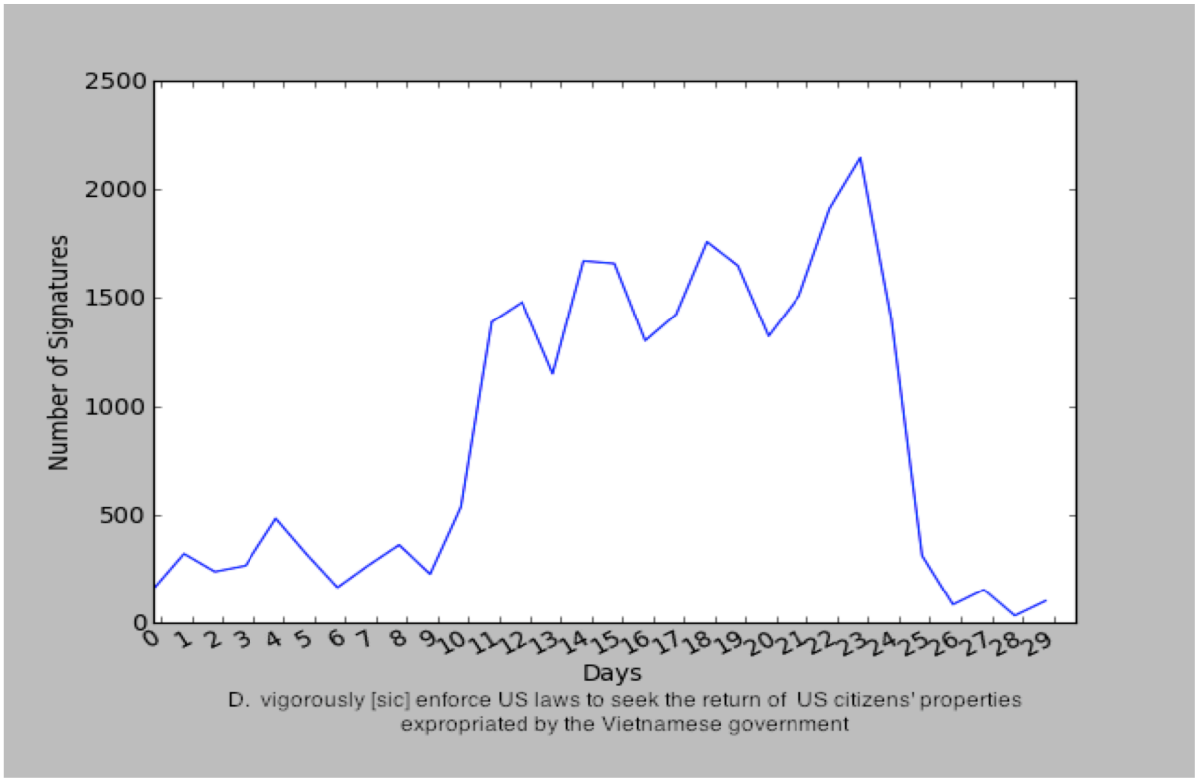
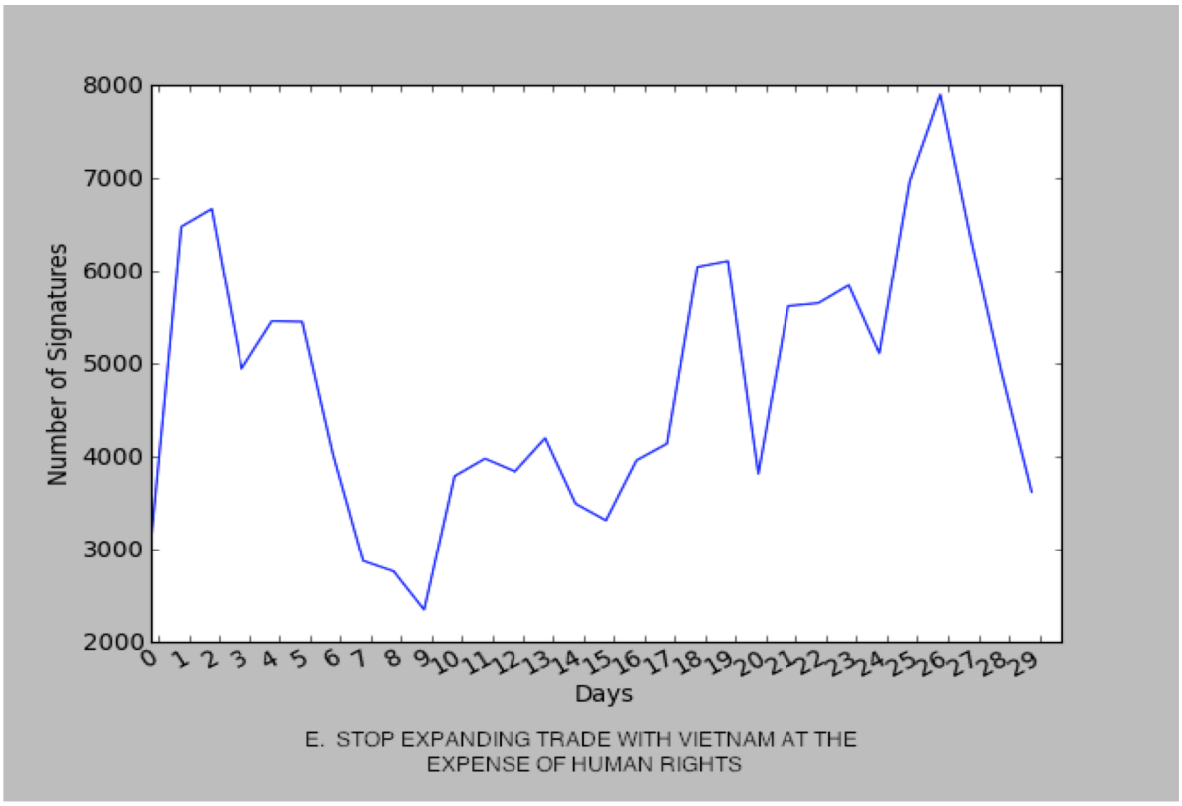


Figure 4, cont'd: C. Leptokurtic Distribution D. Platykurtic Distribution



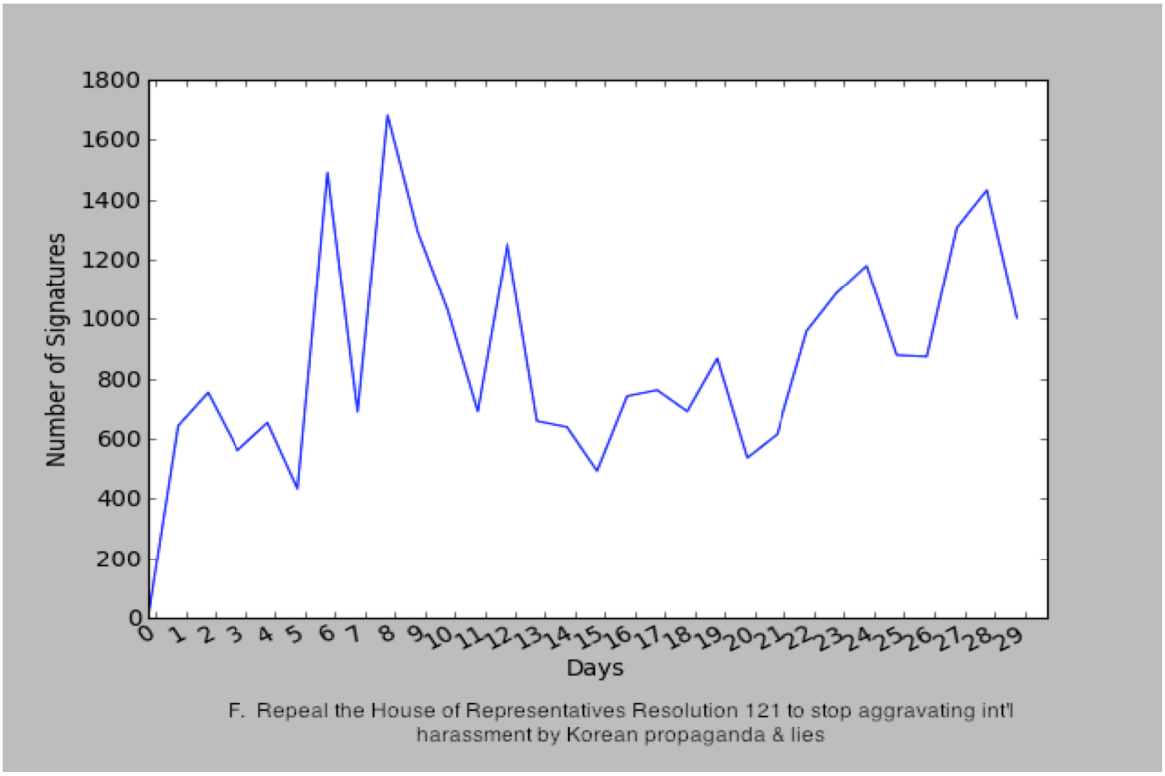


Figure 4 cont'd: E. Platykurtic Distribution F. Near Normal Skewness & Kurtosis

Variable		30 Day Signature Count
bloc1	*coeff*	1.86
	se	.313
	adj R sq	.61
bloc2	*coeff*	1.50
	se	.131
	adj R sq	.84
bloc3	*coeff*	2.31
	se	.384
	adj R sq	.89
bloc4	*coeff*	3.12
	se	.520
	adj R sq	.92
bloc5	*coeff*	1.24
	se	.255
	adj R sq	.94
bloc6	*coeff*	2.05
	se	.574
	adj R sq	.96
bloc7	*coeff*	2.64
	se	.757
	adj R sq	.97
bloc8	*coeff*	2.84
	se	.212
	adj R sq	.99
bloc9	*coeff*	1.64
	se	.247
	adj R sq	.99
	N	1107

Note: The table reflects 9 individual regressions, with coefficients (coeff) and standard errors (se) for each bloc as it was entered into the equation along with the adjusted R Square (adj R sq) yielded by each successively entered bloc. Each regression yielded a significant F, p </= .0001.

Table 1: Regression Analysis of 30 day Signature Count

Category	Frequency1	Percent 1
4 Civil Rights and Liberties	290	26.2
7 Criminal Justice and Law Enforcement	76	6.87
3 Budget and Taxes	67	6.05
21 Human Rights	53	4.79
10 Economy	49	4.43
16 Foreign Policy	46	4.16
8 Defense	44	3.97
14 Family	43	3.88
17 Government Reform	43	3.88
11 Education	42	3.79
18 Health Care	42	3.79
15 Firearms	35	3.16
9 Disabilities	31	2.8
6 Consumer Protections	27	2.44
13 Environment	27	2.44
1 Agriculture	25	2.26
31 Science and Space Policy	17	1.54
22 Immigration	16	1.45
2 Arts and Humanities	15	1.36
29 Regulatory Reform	15	1.36
38 Veterans and Military Families	13	1.17
23 Innovation	11	0.99
5 Climate Change	10	0.9
12 Energy	10	0.9
19 Homeland Security and Disaster Relief	9	0.81
24 Job Creation	9	0.81
34 Technology and Telecommunications	9	0.81

26 Natural Resources	8	0.72
39 Women's Issues	5	0.45
25 Labor	4	0.36
35 Trade	4	0.36
36 Transportation and Infrastructure	4	0.36
33 Social Security	3	0.27
20 Housing	2	0.18
27 Postal Service	2	0.18
28 Poverty	1	0.09
0 No Designated Category	0	0
30 Rural Policy	0	0
32 Small Business	0	0
37 Urban Policy	0	0

Table 2: Top Category Choices for *WtP* Petitions – 1st Choice

Variable		Signature Count over 30 Days	White House Response
Civil rights	*Coeff*	**4774.12**	.505
	se	**1569.42**	.303
	P value	**.002**	.095
Criminal Justice	*Coeff*	129.54	**.752**
	se	1231.00	**.303**
	P value	.916	**.013**
Budget and Taxes	*Coeff*	2401.38	-.357
	se	1801.04	.540
	P value	.183	.508
Human Rights	*Coeff*	994.42	.641
	se	1352.91	.526
	P value	.462.	.223
Economy	*Coeff*	-638.39	-.166
	se	1185.39	.763
	P value	.590	.828
Foreign Policy	*Coeff*	-32.14	-.119
	se	1332.20	.765
	P value	.981	.876
Defense	*Coeff*	1099.93	**1.13**
	se	1546.35	**.506**
	P value	.477	**.026**
Family	*Coeff*	1443.36	.928
	se	1768.19	.535
	P value	.415	.083
Gov Reform	*Coeff*	**4935.28**	**1.13**
	se	**2109.38**	**.504**
	P value	**.019**	**.025**
Education	*Coeff*	299.36	**1.18**
	se	1757.76	**.507**
	P value	.865	**.020**
Health Care	*Coeff*	1630.28	.382
	se	1663.66	.648
	P value	.327	.555
Firearms	*Coeff*	**3683.91**	**1.586**
	se	**1627.80**	**.492**
	P value	**.024**	**.001**

N	1107	1107
Test Statistic	**F(12, 1094)=1.99**	**Chi square(12) =21.21**
p	**.022**	**.047**

Table 3: OLS and Logistic Regressions using Top Twelve Topic Categories