**Introduction**

What influences people to participate in the voting process? How do voters choose which candidates and issues to support? These questions are constantly in the minds of both political scientists and activists. Various models of human behavior have influenced the answers to these two important questions. These models of human behavior span the extremes from very simple, and easily influenced behavior to very complex, interdependent behavior where nothing is linear or easily controllable. Where on the behavior spectrum does political behavior reside? Is it simple behavior driven by data and facts? Or is it multifaceted behavior driven by the interactions, opinions, passion and relationships?

The oldest model of political behavior is that of the *atomized voter* -- a simple view that has dominated the study of voter choice. This view assumes that voters and choices are independent of one another, a necessity for statistical inference. The voting public is an aggregation of autonomous decision-makers, each making a decision based on personal rationale and/or emotion. Further, the voter is influenced only by information and opinion obtained directly via mass media. The atomized voter listens, decides, and votes. Although this model has provided our initial understanding of voters, it is an incomplete account of how decisions are made. In order to simplify the statistics, this model over-simplifies human behavior.

A more complex view of human behavior is the model of the *demographic voter*. Here the voter is not viewed as isolated and autonomous, but as a member of a demographic group which can influence or predict the voter's choices. This model assumes that those with similar attributes will
vote in a similar pattern. This model takes the atomized voter, realizes there are others who are similar, and aggregates them into a demographic cluster. Early models of this approach lumped people into very general categories by gender, ethnicity, education and income level. Current models are more sophisticated with categories such as soccer moms, NASCAR dads, and underemployed knowledge workers. Now political messages are targeted at specific groups. These messages are delivered by better focused media. The analysis is more sophisticated, the view of human behavior is enriched, yet the complexities of voter influence and action are still under-represented.

A third model of the voter has emerged. Political scientists studying the voting behavior and outcomes of the presidential elections of 1988 through 2000 are seeing a more complex model. This is the social voter -- modern citizens do not make decisions in a social vacuum. Who we know influences what we know and how we feel about it. After controlling for personal attitudes and demographic membership, researchers found that the social networks, voters are embedded in, exert powerful influences on their behavior.

Very few people are social isolates that would fit the simple model of the atomized or demographic voter whose only interaction is with mass media. Most voters have interactions with a diverse set of others including family, friends, neighbors, co-workers, members of their place of worship, and acquaintances. We do not merely act on information we receive directly from the media. We get new information, interpretation of that information, re-interpretation and influence via our social networks. It's the Conversations, stupid!
Voter Participation

Voter participation has been a concern in American politics. The United States is fifteenth amongst major countries in the percentage of voting-eligible citizens who actually vote. Often, those eligible to vote, do not register, or are registered and choose not to vote. A common excuse given is that a single vote does not count for much. We saw in the 2000 presidential election how the tipping point of the whole national outcome was determined by a few hundred local votes. The power of a single vote has never been so obvious.

Another common excuse heard by those who are eligible, yet choose not to vote, is that there is no obvious difference between the candidates -- they are all the same. A candidate that appeared acceptable during the campaign may turn out quite different after being elected. Those who pay more attention to mass media may get a homogenized view of the candidates.

A final reason for not voting is often the personal circumstances of individual voters. Those suffering financial or emotional hardship -- those out of work for too many months -- have increasing difficulty participating in social and civic activities including voting. It has been shown that populations who are regularly discriminated against have a more difficult time organizing and getting their views heard.

Research on voter participation in elections has revealed the importance of social networks. Voter turnout is highly correlated among family, friends, and co-workers. If those in your social network vote, and make that known, then there is a much higher probability that you will vote also. We are all influenced by those who we view as similar to us. We may adopt the actions of a similar others either through conformity or competition. To fit in with a group, we conform to the actions of
others. To keep up with those we view as competitors, we mimic their behavior so as not to be left behind.

Trends in groups often start with one or a few persons taking a stand. Expressing your intent on voting in your network is one way to get other network members to the voting booth. Imitating those we like and respect, while also keeping up with others, are strong forces that ripple through social networks. If everyone in your network holds similar political views [not always the case], then expressing your intent to vote is a powerful lever for your favorite candidate or issue.

Recent research in social networks has shown that human networks tend to follow the small-world model. People connect in small groups according to common interests, views, goals, or affiliations - communities of people with similar sentiments. Yet, these communities are not isolated from each one another. They are connected to each other by bridging ties – a person in one group has a friend or colleague in another group. Some of these bridges are shortcuts that minimize the distance between all clusters. Shortcuts between otherwise distant clusters are what make our world seem small -- strangers in the mirror are closer then they appear to be.

Using the small-world model, researchers investigated the effect of a single person's decision to vote. A person's influence spread throughout their local group. People were 15 percent more likely to vote if one of their political discussants made clear their intentions to vote. Within the research population a citizen would positively affect the turnout decision of up to four other people. The researchers called this a "turnout cascade". In addition, the increased turnout was found to favor the candidate of the initiator. Human clusters tend to contain similar preferences for candidates and issues, thus an increase in participation was equivalent to an increase in between two and three votes.
for the candidate. Denser clusters tended to show higher rates of voter participation.

In clusters where similar views were not predominant, the turnout cascades had neutral or negative effects for the cascade initiator's preferred candidate. Cascades could also influence a person to abstain from voting. The researchers found that either behavior – participation or abstention – had similar imitation rates.

Turnout cascades were not just local phenomenon. Under the right conditions, they extended to indirect links also. Not only were the political discussants of the cascade initiator affected, but so where the discussant's discussants. Clusters with ties to other clumps in the network, where similar opinions may predominate, will find their influence ripple to those clusters.
Figure 1 shows a small network focused around a political discussion taking place at work. The cluster in the middle [nodes 001-005] are the co-workers. They are connected by a grey link if they discuss political issues and candidates – a thicker line indicates more frequent interaction. The clusters around this work group are friends and family [F&F] of each employee who also have political discussions. Some of the F&F on the right side of the chart know each other [i.e. employee 002’s F&F interact with the F&F of employees 001 and 003].

A node is shaded if the person has made public their intention to vote in the upcoming election. A node without shading has made no public declaration of participating in the upcoming election.

Figure 1 shows a small-world network of voters. The group in the middle of the network are colleagues who discuss politics at work. Around the edges are clusters of friends and family of each
of the employees. Two persons/nodes are connected if they have discussed politics in the last month. A thicker link indicates more frequent discussions of politics. A node is colored black if the person has announced the intent to vote, a node is colored white if the person has shown apathy or announced the intent to abstain from this year's election. A node is grey if no public decision has been made. Those clusters where the majority has indicated their intent to vote will likely have all members in voting booths on Election Day.

Groups influence the behavior of their members. Key opinion leaders, and experts, also hold the power to persuade. Often we may know experts who have spent considerable time gathering and analyzing information on a particular topic or person. We use these persons as shortcuts and filters for our own decision-making. The implicit payment for the expert's political knowledge is pressure to participate in the voting process. Research has shown that those who regularly talk to political experts are more likely to participate in campaigns and to vote. Those with links to the experts may be key conduits of privileged information back to their own social network, thus making them a local expert and passing the influence on locally. The diffusion of influence is more likely if the group holds both the original and local expert in high regard.
Voter Choice

We all belong to multiple networks. Some of these connections are by choice -- friends, and others by circumstance – work and neighborhood. Families are a combination of choice [spouses] and circumstance [children, relatives]. This results in interesting connections within and between networks. Not only do we receive information from those in our social circle, but we are more likely to use it. Each of the networks, we are embedded in; influence our thinking, opinions and choices.

Common wisdom expects all people in a single cluster to vote for the same candidate. Evaluation of voter selections in the 2000 presidential election found this not to be true. Researchers estimated that only one-third of the voters who chose George W. Bush or Al Gore were in homogeneous networks where all members made the same choice. The remainder of the voters for each candidate was in mixed networks where political disagreement was present and obvious. These clusters showed various combinations of support for the candidates. They provided opportunity for influence, change, and defection. Many voters changed their choice via discussions in the network. Initial support for a candidate did not always last -- even back and forth choices were documented.

Do all networks we are members of influence us equally? The research varies in this regard. There is no simple answer or common thread across all circumstances. It is expected that stronger ties would create stronger influence. Indeed the strongest influence occurs within family boundaries. Social influence among married pairs is very high. Our expectation is that influence along strong ties continues to friendships also. Here the data is mixed. Some research confirms the expectation that friends influence friends in political choices. Other research shows that political disagreement can be found amongst friends -- all friends don't agree on political matters. This unexpected finding is explained via the different dynamics at play in friendships and political influence. We choose
friends on many different criteria, including their opinions. We like our friends despite their political knowledge or opinions. Other research confirms the expected result that close friends influence each other on many choices including political candidates and issues. This affect appears to intensify in closed networks that have few connections to other clusters with different opinions and information.

A somewhat surprising finding is the strong affect that neighbors and other casual acquaintances can have on political choice. These Conversations can bring the voter information that is not available in their denser and more homogeneous family and friendship networks. Neighborhoods, especially suburban bedroom communities, can be a meeting place of many diverse networks and information flows. We choose our neighborhoods for the school system, transportation efficiency, attributes of a particular house, and general cues such as a "neighborhood with school age kids". We do not interview all of the neighbors before making the down payment on our new house or signing a lease on an apartment. Therefore we often move into a neighborhood of others who are strangers to us. They are connected to networks of families, friends, and co-workers different than ours. In addition we bring in even more new connections to the neighborhood milieu. Neighborhoods are places where people will hear information and opinions that are likely to be different than those they hear at family gatherings, at work, and at their place of worship. But, does this new information influence choices and opinions?

Not all neighbors become involved in the neighborhood. Some individuals and families in neighborhoods maintain very weak ties with their neighbors. They greet them on the street, or at the mailbox, may discuss the weather, but otherwise spend time with their original networks of family, friends, and co-workers outside of the neighborhood. Other individuals and families become more
involved in the neighborhood. They help their neighbors, visit with them in their homes, and have children that play together, or otherwise include the neighbors in their extended social network. These relationships were found to influence political choices – especially if the neighbor had provided useful non-political information in the past.

The research, into neighborhood affects of political influence, reveals a dynamic that also shows up elsewhere. People with strong experience or expertise in political matters do not seek the views of others, nor are they strongly influenced by the opinions they hear. It appears that we are influenced by our social networks, but that influence is mitigated by individual thresholds of knowledge and experience. Your neighbor may be open to a lawn fertilizer recommendation because this is their first home with a lawn. But this same neighbor may ignore all political advice because of their past experience on political campaigns or seeking political office. One threshold for new information is low, while the limit for other information is very high.
Not only do individuals have thresholds, but communities and networks also have limits on information. These are barriers to minor opinions taking hold. Opinions and information that run counter to the dominant view within the network are usually dismissed. Yet, in a network that contains many undecided voters and where the dominant view is held by less than 50 percent of the total population, members can still be influenced to support the previously minority view.

What happens to those who hold minority views in a cluster or community? Are they eventually converted to the majority opinion? Not if they have a high limit for their opinion. Regardless of threshold, whether high or low, they will likely maintain that minority view if they have support for that view elsewhere in the cluster or outside of it. Research shows that support for a holder of a minority view does not need to be massive. Often just one link to someone who agrees, who says "It's OK" is all that is necessary to maintain minority views even in the face of majority efforts to convert. This support is especially necessary for a person to follow through on their views – to actually vote. An unsupported person may maintain their views, but is less likely to act on them. If a minority opinion holder can find just one person in their social network that echoes their stand they are much more likely to follow through, take action and vote on their beliefs. It appears that voters supporting third-party candidates especially need this support to overcome the uncommon behavior of voting outside of the two parties and of the prospect of wasting their vote. Almost 50 percent of those who supported the third party candidate in the 1992 presidential election did not actually vote for him. They either voted for a major party candidate or chose not to vote at all. Why? They had no one in their political discussion networks that supported their view. Social isolation, or the appearance of it, is a strong force, especially where personal thresholds are not high. Failing to find social support in their immediate social network, supporters of third-party candidates may conclude that the third-party cause is hopeless.
A person grossly outnumbered at work, or in their neighborhood, will maintain their support for a candidate or issue, if friends or family support their views. Not only are strong ties viable support mechanisms, certain weak ties can also support deviant views. Weak ties are significant support links if we need support for views different from our family and friends. Weak ties are usually established with others in clusters different than our own. These weak ties bring us information and views that are likely to be much different than those in our local cluster. In addition to bringing us diverse viewpoints, weak ties also support those distinct views.

Weak ties are connections to people we know but do not interact with frequently. They do not extend to those who are basically strangers to us. We may be aware of someone, or had a superficial interaction with them, but that does not mean we have a weak tie to them. No evidence was found that strangers or those with very superficial ties can support others with minority views.

The voter research found no apparent influence by strangers on citizen choice in political matters – the only exception being those of obvious political expertise. Interaction with public figures influenced both voter choice and participation. Shaking the candidates hand and getting your personal question answered obviously influences voters. Interaction with other known political elites has a similar affect.
Influencing Voters

How does a campaign

1. use social networks to influence voters on choosing their candidate or issue?
2. follow up the choice with action by participating in the election?

The network in Figure 2 shows the small-world voter network. This time the voters/nodes are colored by their initial political choice. Those choosing the Republication candidate are red, those choosing the Democrat are blue, those undecided or leaning toward a third party candidate are grey.
Figure 2 shows the same network as Figure 1, but now the nodes are color coded by their current choice on who they will vote for President. Nodes in blue are choosing the Democrat, nodes in red are voting for the Republican, and the grey nodes are undecided or choosing an Independent candidate.

We see many interactions amongst people with similar views. Yet, some who apparently disagree, are also interacting. Those who face disagreement at work, get support for their views from F&F.

Node 031 is an isolate in political conversations. Though 031 is a friend of 003, they talk about other matters, not politics – 031 has expressed a disdain for political discussions. Node 031 may be one of those rare individuals that get a majority of their political insights and opinions from mass media.
We will use five rules we learned from the recent research in presidential elections.

1. One can increase voter participation by announcing plans to vote. One should do this in a community that is predisposed to your candidate.

2. Find communities that don't have a majority for the other candidate. Build connections to undecided voters and those who support your view. Aim for one or more ties to all supporting your candidate. These are the key battlegrounds in elections. See clusters in Figure 2 above.

3. Scan communities that do have a majority for the other candidate for anyone supporting your candidate. Build at least one supporting tie to each person leaning toward your candidate. They need help in maintaining their minority view and acting on it.

4. If you are well integrated in your neighborhood, and are known for providing useful advice to neighbors then consider talking to them about your candidate. Also put out a yard sign supporting your candidate, and suggest others do so also. Leverage your established influence.

5. Unless they are public figures, strangers do not influence. Instead of having strangers call voters, or knock on doors, the campaign should find well-connected supporters and have them go out into their own networks [workplaces, places of worship, neighborhoods, sports leagues, etc.] building support for the candidate. Bringing in masses of campaign workers, who are strangers, to contact local voters may cause more harm than good. This may have been part of the cause in the collapse of the 2004 Dean campaign in Iowa.

The Dean campaign had a strategy called the Dean Storm – they would fly in people from across the country who they had recruited on the Internet. These outsiders, all wearing orange knit caps, would then go out into the public in an attempt to persuade Caucus participants. The Kerry campaign had a more successful strategy, and an apparently better understanding of social networks. The Kerry campaign connected to local politicians who had already built local influence networks over the
years. The Kerry people had friends, neighbors, and co-workers influencing each other – and a surprising victory.

Figure 3

Figure 3 shows the same network as Figure 2 – all of the same people are connected to the same others. Now the nodes are arranged according to the emergent structure of the network – into clusters based on connections. The network topology is determined by who is connected to whom, both directly and indirectly. This shows a more accurate picture of the group structure. Notice the more obvious clustering of like nodes.

This emergent structure also gives us a better read on the voters 'in play' – the grey nodes. In addition to isolate 031, we see two clusters of grey nodes:

- 004, 018, 024
- 007, 008, 009, 012, 013

Which are the nodes the Reds should each focus on? Which are the nodes the Blues should each focus on? Is there one group that both would go after? Is it worth pursuing the isolate? Where is the most likely location for a cascade?
Obviously the social network approach to voter influence is not something that can be centrally planned like a big media campaign. The social network strategy is a local phenomenon. It is a face-to-face strategy supported by phone and internet. It is one-to-one, not one-to-many as big media efforts are. A campaign can give advice, outline the strategy, and provide talking points but the social network strategy must be executed by individuals working locally for a candidate or issue. The social network strategy allows citizens to get involved in campaigns around issues and candidates they believe in.

How do you build networks of engagement? Beginning the network during the campaign may be a poor strategy. Just like the newly unemployed executive who is 'networking' for a job, and may come across awkward and obvious, so is the ‘instant’ friend seeking support for a cause or a candidate. Networks are better formed when they are not immediately necessary. Networks take time to build and ties are easier to form when there is no obvious transaction immediately behind them.

The network strategy does not require a large war chest of political contributions. It does require time and energy and understanding of the social dynamics described above. The individual voter or political activist who builds a strong political network finds that this network is useful outside of campaigns. In fact, a network that accomplishes many goals for its members may be ideal for political persuasion because the trust and affinity levels are high in such networks. Such networks are not viewed with suspicion -- "Oh oh, it's an election year and here comes my every-two-year-friend with a big smile."
All politics are local. Citizens interact with those they know best, and have the most influence over. We make sense of the world and all of the information and data we receive through conversations with trusted others. Only the simplest decisions are made on information and logic alone -- this toothpaste is 50¢ cheaper, I will buy it. Most important decisions are not made in a social vacuum. Who we vote for, what neighborhood we live in, what car we drive, which doctor/lawyer/plumber we use, how we see world events are decisions that are adjusted and refined through our social networks. We make sense of the world through conversations that mix various viewpoints, information sources and feedback. The election is a conversation, not a data flow.

Social networks are powerful influences on our choices. What about social networks enhanced by technology? Now we have power and speed. Ideas and events drive self-organizing networks -- the whole process accelerated by technology. After the March 2004 terror attacks in Madrid we saw emergent groups form throughout Spain. First, Spaniards organized to march against terrorism. Next, as their elections approached, and a lack of transparency was evident in the investigations around the terror attacks, Spaniards marched against their government. Protests were quickly organized as thousands of voice and text messages bounced between friends and families. Social networks were activating – smart mobs in Spain were practicing emergent democracy.

Most social network influence over voting behavior is gradual as conversations make sense of the political information bouncing around within and between clusters. When required, social networks can quickly organize across former boundaries and merge into a very influential community of motivated voters. When voters are highly motivated, by and with their peers, major media’s message is moot – social ties drive the decision. It’s the Conversations, stupid!
Bibliography


Paul A. Beck, "Encouraging Political Defection" (2003)  
http://psweb.sbs.ohio-state.edu/faculty/pbeck/encouragingdefection.pdf

Pat Dunlavey, "Friend to friend politics and the 'inside-out' campaign" (2003)  

James Fowler, "Turnout in Large Scale Social Networks" (2003)  
http://www.brown.edu/Departments/Political_Science/faculty/Zuckerman/chapter14.pdf


http://www.princeton.edu/~csdp/events/pdfs/huck.pdf

Robert Huckfeldt, Paul Johnson, "Individuals, Dyads, and Networks: Autoregressive Patterns of Political Influence" (2003)  
http://www.brown.edu/Departments/Political_Science/faculty/Zuckerman/chapter2.pdf


Laurence Kotler-Berkowitz, "Friends and Politics: Linking Diverse Friendship Networks to Political Participation" Revised Manuscript (2003)  
http://www.brown.edu/Departments/Political_Science/faculty/Zuckerman/chapter8.pdf

http://www.brown.edu/Departments/Political_Science/faculty/Zuckerman/chapter7.pdf

Yamir Moreno, Maziar Nekovee, Amalio. F. Pacheco, "Dynamics of Rumor Spreading in Complex Networks" Pre-publication draft (2004)  
http://arxiv.org/abs/cond-mat/0312131

http://arxiv.org/abs/cond-mat/0312090

http://www.theihs.org/libertyguide/hsr/hsr.php/58.html