Cursing or Bandwagoning?

– Experimenting the Uninformed Voting Behavior –

Draft/Outline

Gento Kato[1]

[1]*Department of Political Science , University of California, Davis*

November 21, 2017

1 Motivation

In discussing the civic competence under democracy, political information is an critical element. The body of research suggests that informed voters are more likely to participate in politics (Delli Carpini and Keeter 1996, Lassen 2005, Larcinese 2007, Yamazaki 2008, Gemenis and Rosema 2014) and vote more in line with their preference (Zaller 1992, Bartels 1996) than uninformed voters. However, less is known about the logic of the behavior for uninformed voters. Conventional rational choice models of voting participation (i.e., Downs 1957, Riker and Ordeshook 1968, Matsusaka 1995) imply that uninformed voters expect *zero* individual level benefit from voting for particular candidate or alternative. On the other hand, this model fails to account for the fact that many uninformed voters, even when they have a little knowledge of what they are voting for, do decide to participate, and if participated, vote in certain direction. Then, what shapes the participation decision and vote choice of uninformed voters? The current project addresses this question by specifying the conditions of *uninformed voting*.

To find out the conditions of uninformed participation, the current study proposes a mock-election experiment to test implications from two set of models that can predict the behavior of uninformed voters. First focuses on the instrumental incentives. *Swing Voter's Curse* (SVC) model (Feddersen and Pesendorfer 1996) is one of the first formal model to explain the role information in the *strategic* decision of voting participation. The model implies that *uninformed independent* voters are motivated to delegate the final electoral decision to the hands of *informed independent* voters. To achieve this goal, the model specifies the conditions where uninformed independent voters have an incentive to strategically turn out in elections.

Second emphasizes the role of non-instrumental motivation. Here, the *bandwagoning* model (Bischoff and Egbert 2013) suggests that voters receive non-instrumental utility from acting in the same way as other voters. Uninformed voters may be incentivized to vote in line with the (expected) majority in the society. Both of the above models suggest that the behavior of uninformed voters are dependent upon the behavior of other voters in the society. Even when they have no information about their own preference, social information may help them to behave in systematic way.

In light of the above models, I am designing the experiment to assess the behavioral mechanism of uninformed voters. The only direct experimental applications of SVC model that I could find (Battaglini, Morton and Palfrey 2010, 2008) are highly stylized and it is unclear if their findings can be generalized to the real-world mechanisms of voting participation. Based off of their models, I intend to design more contextualized version of the SVC experiment. *(Write Some More About Features of Experiment...)* Also, I am intending to conduct experiment in two countries, United States and Japan. The cultural difference in two countries may influence the behavioral patterns in experiment.

The result of the experiment will shed new lights on the studies of voting behavior from two perspectives. First, it helps to deepen understanding of the connection between information and participation. Here, past observational studies on informed-participation connection are having hard time explaining "why" there is a connection, and traditional formal-theoretic voting models oversimplify the logic by assuming that uninformed voters *never* receive benefit from participation. This study will give new insights to the logic by allowing uninformed voters to potentially receive benefit from participation, and specify the conditions where they may or may not participate. Second, the experimental result has important implications to the discussion of civic competence in democracies. If it is the case that uninformed voters do make logical decisions to participate in elections, being uninformed does not necessarily mean they have no ability to represent their opinions in democratic government body (while bandwagoning behavior may have negative consequences).

The remaining sections will be constructed as follows. Section 2 draws implications from *Swing Voter's Curse* (SVC) model (Feddersen and Pesendorfer 1996) and bandwagoning model (Bischoff and Egbert 2013) to identify general conditions where uninformed voters may have incentives to participate in election. Then, section 3 proposes the specific design of the mock election experiment, and section 4 introduces hypotheses specific to the proposed experiment. Lastly, section 6 discusses the potential implications and significance of the study.

2 Theory

Even when many observational studies find the positive correlation between individual level information level and voting participation, not many studies address the question of exactly *how* information helps people to participate in election. In one of few efforts, Matsusaka (1995) extends the conventional rational choice voting participation model (Downs 1957, Riker and Ordeshook 1968) to incorporate the role of information. Now, in the conventional model, potential voters' expected utility from participation is represented as follows:

$$pB - C + D$$

Here, the equation is constituted from benefit (B) from one's preferred candidate (or alternative) being elected, probability of the voter being pivotal in deciding the election result (p), cost of voting (C) and duty or value embedded in just participating the election (D). Voters are expected to participate and sincerely vote for the preferred candidate if the outcome of the equation is positive value. Now, information can be incorporated as the level of uncertainty in the value of B. Matsusaka (1995) adjust the model such that lower information level leads to higher uncertainty in B, and reaches $B = 0$ if a voter is completely uninformed and maximized if a voter is fully informed. Therefore, uninformed voters never receive *non-zero* utility from their vote choice, Their participation decisions are solely made by the comparison of C and D, and if participated, their vote choice is always random.

This model explains the fact that informed voters are more likely to participate in elections than uninformed voters, but fails to account for the following two potential behaviors of uninformed voters. First, the model cannot explain the variation in the rate of uninformed participation across different elections. Given that the critical factor C and D should be fixed at individual-level and is not expected to vary across election environment, uninformed voters' participation decision calculus should never be influenced by the election environment. Second, the model cannot predict non-random vote choice of uninformed voters if participated. Given that their choice-dependent payoff B is fixed to 0, the model cannot differentiate the utilities between different vote choices.

To understand the role of information in voting behavior, it is essential to understand the behavior in *absence* of information. Here, the conventional model of voting participation does a poor job in predicting

uninformed voting behavior. Therefore, in the remaining parts in this section, I introduce two models of voting participation which provide clear predictions of *when* and *how* uninformed voters participate in election.

2.1 Swing Voter's Curse (SVC) Model

Swing Voter's Curse (SVC) model of voting (Feddersen and Pesendorfer 1996) one of the first model that is designed particularly to explain the relationship between information and participation. The model is unique in two perspectives. First, the model allows *strategic* incentive to participate in election. The utility function of voters is contingent upon the decisions of other voters in the population, and it allows voters to behave in the way which it does not follow their environment-independent preference. Second, the model assumes no cost of voting. In contrast to the conventional model which relies on the value of C to determine the potential participation, SVC model predicts that some voters have an incentive to abstain even without the cost of voting.

Given the above design features, SVC model proceeds as follows. First, there are two candidates $\{0,1\}$ and three types of voters $\{i,0,1\}$. Type 0 and 1 voters always have higher utility when the corresponding candidate to their type is elected, thus defined as *partisans*. Type i are *independents* and they have common latent preference of candidate assigned by the state $z \in \{0,1\}$ (in state z, all independents prefer candidate z). Second, total of N voters are randomly drawn from the population by probabilities $\{p_0, p_1, p_i\}$ assigned to respective types. Third, all voters receive the message $m \in \{0, \alpha, 1\}$, defined as the probability of state z being 0. Those who received 0 or 1 are informed, since they know for sure which candidate makes them better off if they are independents. On the other hand, those who receive $\alpha \in (0, 0.5)$ are uninformed, because they are uncertain about the true state z. The probability of being informed is exogenously assigned as $q \in (0,1)$. Lastly, all voters make a decision to voter for 0, 1 or abstain (ϕ).

The equilibrium analysis shows that informed independents always vote for the candidate m, and partisans always vote for the corresponding candidate to their type. Uninformed independents, on the other hand, are expected to act so they can "maximize the probability that the informed independent agents determine the winner" (414). To achieve this purpose, uninformed independents mix abstention and voting in their equilibrium strategy (have a rational incentive to abstain) when $p_i(1-q) \geq |p_0 - p_1|$ (417). This result provides three implications. First, if the proportion of uninformed independents in voters (i.e., $p_i(1-q)$) is

smaller than the non-zero partisan bias (i.e., $|p_0 - p_1| > 0$), uninformed independents always turn out to vote to offset the partisan bias so that informed independents can determine the final electoral outcome. Second, if there is no partisan voters or there is no difference between the number of type 0 partisans and type 1 partisans, uninformed independents always abstain. Third, if uninformed independents have incentive to take mixed strategy (i.e., $p_i(1-q) \geq |p_0 - p_1| > 0$), they vote only to offset partisan bias and the probability of turning out increases along with either the increase in partisan bias or the decrease in the proportion of uninformed independents.

The result of SVC model implies two things. First, the result implies that the participation decision of uninformed voters are contingent upon the preference and information distribution among the voter population. Especially, proportion of being uninformed and the size of partisan bias are important environmental factor which influences the decision calculus. Second, the result shows that uninformed (independent) voters are always better off by making informed (independent) voters to determine the electoral outcome. Therefore, if participated, uninformed voters always vote only to offset existent partisan bias in the voter population, so that they can delegate the final electoral decision to informed voters.

2.2 Bandwagoning Model

Explanation of the Bandwagoning Model...

3 Experimental Design

3.1 Previous Attempts to Test SVC and Bandwagoning

Not many studies tested the implications from the models in the previous sections. The only direct experimental application of SVC model that I could find is (Battaglini, Morton and Palfrey 2010, 2008). In their application, they use highly abstract apolitical context to test the expectations from SVC model. Specifically, the experimental procedure is described as follows. First, participants are separated into the group of seven (they are assumed to be all *independents*). Second, in the computer screen, participants see two jars with eight balls in each jar: Jar 1 contains 2 red balls and 6 white balls and jar 2 contains two yellow balls and six white balls (i.e., the probability of being informed q is 0.25). Third, the monitor randomly choose one of jars with the probability π (parallel to α in SVC model) by tossing a die (the result is hidden from participants, but they know $\pi = \{1/2, 5/9\}$). Third, balls are shuffled on the screen with the ball colors

hidden, and one ball is assigned to each participant. Participants can then check their ball colors by clicking on it. If the ball color is red or yellow, one is informed, because they know which jar the ball came from; if the ball color is white, one is uninformed. Fourth, participants choose whether to vote for which jar the ball originally came from (the correct answer is defined the by the state defined in the third stage) or to abstain. Here, just before the selection, participants notice that the computer casts $m \in \{0,2,4\}$ votes to jar 1 (i.e., partisan bias is created). After each run, participants receive 80 cents if majority of votes are casted to correct jar, and 5 cents if not. The whole experiment consists of 3 parts which include 10 rounds of the above procedure in each.

The result shows the tendencies consistent with the implications from Feddersen and Pesendorfer (1996). First, if $\pi = 1/2$, uninformed independents almost always abstain. Second, the presence of partisan bias does encourage uninformed independents to turn out and vote to compensate the bias. Third, the decrease in partisan bias m contributes to the increase in abstention by uninformed voters (consistent with the third implication made by SVC model). For example, when $\pi = 1/2$, the abstention rate of uninformed voters reach 91% if $m = 0$ but it decreases to 19% when $m = 4$. The results clearly illustrate that uninformed independents have a strategic incentive to abstain and delegate their decisions to informed independents.

Explanation of the Bandwagoning Experiment...

3.2 Design Focus of the Current Experiment

Given theoretical expectations and the designs of the previous experiments, the current project aims to construct the experiment that closely traces the structure of SVC model, but incorporates the possible existence of extra-constant benefit based on uninformed identity. Particularly, the current experimental design focus on three features: Contextualization, manipulation of partisan bias and uninformed proportion, and channels of common knowledge sharing.

First, the current experiment intends to contextualize the mock-voting situation to have the meaning closer to the real-world. In their highly abstract design of election, it is difficult to for the previous experiments to assess the real-world mechanisms of voting participation. Especially in Battaglini, Morton and Palfrey (2008, 2010), it is not clear if "choosing a correct jar" approximates the voting decisions made in the real-world elections.

Second, the current experiment intends to manipulate both uninformed proportion $(1-q)$ and partisan

bias $|p_0 - p_1|$ to assess the effect of election environment on participation decisions of uninformed voters.Battaglini, Morton and Palfrey (2010, 2008) fixed the assignment of the probability of being informed q and the proportion of independents p_i. This in turns makes their experiment impossible to assess the effect of uninformed proportion $(1-q)$ on the participation decision calculus of uninformed voters. SVC model implies that, decrease in the size of uninformed proportion make it more likely for uninformed independents to turn out in election to offset the existent partisan bias. This implication was never tested in the experiments conducted in (Battaglini, Morton and Palfrey 2010, 2008). The current experiment manipulate both parameters to further understand the decision making mechanism of uninformed voters.

Third, in the previous experiments, it is unclear how the common knowledge (i.e., p_0, p_1, p_i and q) are shared among voters. In the real-world situation, those common knowledge are not just provided out of nowhere. Voters may obtain relevant information through at least two channels. One channel is media *polling*. Here, news reports on the pre-election public opinion polling often include some information about the distribution of partisan preference or other features of aggregated public opinion. Another channel is *social interaction*. Here, voters may speculate the level of relevant parameters based on the information obtained from direct interactions with their community (or group) members.

3.3 Experimental Procedure

Given the above design focus, I designed politically contextualized SVC experiment. To begin with, 160 undergraduate students are recruited into the study of voting in election. Each session involves 16 participants and lasts about one hour and students are paid with the participation fee of $5 regardless of their decisions in the experiment. The additional fees are paid according to the outcomes of the mock-elections in the experiment. One session is constructed from three stages, where each stage involves 15 rounds of mock-election. The specific experimental procedure goes as follows.

At each round, there is $\$k$ worth of public goods, and participants are instructed to elect the distributor of public goods (total distributed goods will be exchanged with monetary incentive at the end of the session). There are two candidates, A and B, of public goods distributor. Only one of them is an *equal* distributor with probability $\pi = 0.5$ (π is common knowledge) and another is always an *unequal* distributor. If elected, *equal* distributor evenly splits the public goods to all participants, while *unequal* distributor gives goods only to their corresponding allies.

Table 1: Payoff Correspondence of Voters' Type and Elected Distributor's Type

		Elected Distributor's Type			
		Candidate A		Candidate B	
		Equal	*Unequal*	*Equal*	*Unequal*
Voter's Type	A's Ally	$\frac{k}{16}$	$\frac{k}{16p_A}$	$\frac{k}{16}$	0
	B's Ally	$\frac{k}{16}$	0	$\frac{k}{16}$	$\frac{k}{16p_B}$
	Independent	$\frac{k}{16}$	0	$\frac{k}{16}$	0

After the general instruction about the structure of the game, each participant is assigned to one of three types – candidate A's ally (A), candidate B's ally (B), and independent (I) – with corresponding probabilities $\{p_A, p_B, p_I\}$ (these probabilities are not shown to participants). Then, if the voter is independent, one is informed with probability q. Informed participant is provided with the sentence that says "You know *for sure* that candidate X is an *equal* distributor and candidate Y is an *unequal* distributor." (e.g., $X, Y \in \{A, B\}, X \neq Y$). The payoff of each voter's type from each elected distributor can be summarized in Table 1. Here, candidate allies always expect the same or higher payoff if the distributor corresponding to their partisanship is elected (i.e., $u_A(A) \geq u_A(B)$ and $u_B(B) \geq u_B(A)$), while independents always expect higher utility from *equal* distributor to be elected since they receive nothing from *unequal* distributor (i.e., $u_I(equal) > u_I(unequal) = 0$). Therefore, candidate allies should always vote for the distributor corresponding to their partisanship, and independents, if they are informed, should always vote for *equal* distributor. There is no weakly or strictly dominant strategy for uninformed independent.

In the next step of the experiment, participants are provided with complete or incomplete information of the common knowledge (i.e., distribution of voter types and information levels). For those who are receiving complete information, the knowledge is provided through *polling* channel. In this treatment, participants are provided with the short paragraph explaining the distribution of A's allies, B's allies and independents. Also, the polling result reveals the number of informed members in the voter population. For those who are receiving incomplete information, knowledge is provided through *social interaction* channel. In this treatment, participants are involved in the interaction with other participants to obtain information about other's preferences. This setting approximates the impression formed from the direct encounter with community members, because voters have to manually collect information. Also, in this way, participants

never be able to obtain the complete set of common knowledge.

In the last step of the each round of election, participants are simultaneously choose to cast their vote for one of candidates or to abstain. If the voting result comes out to be tie, the final result will be decided by the toss of fair coin. If *equal* distributor is elected, every member in the group receives the payoff of $k/16$. If *unequal* distributor is elected, only the ally of the elected candidate X receives the payoff of $k/p_X 16$. The whole experiment consists of two stages where each stage involves 15 rounds of mock-election.

The experiment manipulates two parameters: ally (partisan) bias (i.e., $|p_A - p_B|$) and uninformed voters' proportion (i.e., $(1-q)$). p_I is fixed to the same rate (i.e., $\frac{1}{2}$). Ally bias has three levels: *Large* (i.e., $|p_A - p_B| = \frac{1}{4}$), *small* (i.e., $|p_A - p_B| = \frac{1}{8}$), and *none* (i.e., $|p_A - p_B| = 0$). Uninformed voter's proportion has three levels: *More uninformed* (i.e., $(1-q) = \frac{3}{4}$), *even* (i.e., $(1-q) = \frac{1}{2}$), and *less uninformed* (i.e., $(1-q) = \frac{1}{4}$).This parameter treatment is assigned as within-subject treatment, varied across each round of election.

4 Hypotheses

Under any conditions in the experiment, candidate allies are expected to participate and vote for their allied candidate, and informed independents are expected to participate and vote for an equal distributor. The dependent variable of interest in this experiment is the behavior of uninformed independent voters.

If full information of the common knowledge is provided (polling treatment), it is expected that the specific predictions should follow the exact predictions from the SVC model. The rough predictions of the model are provided in Table 2. Note that column here represents *uninformed independent proportion* instead of *uninformed proportion* (given $p_I = \frac{1}{2}$) to make interpretations simple. First, it is expected that uninformed independent voters always abstain if there is no bias in the proportion of candidate allies. Given the purpose of delegating the votes to informed independents, their purpose is already achieved. They *should not* participate and vote randomly to prevent informed voters from determining the final outcome. Second, as ally bias gets larger, uninformed independents are more likely to participate in election and vote to *offset* the bias. Third, as uninformed (independent) proportion decreases, voters should be more likely to participate in election and vote to to offset the bias.

On the other hand, if the information of the common knowledge is incomplete (social interaction channel), the knowledge provided does not necessarily represent th overall picture of voter population. Un-

Table 2: SVC Model Predictions of Uninformed Independents' Behavior under *Polling Result* Channel

	Uninformed Independent Proportion $\frac{1}{2}(1-q)$		
Ally Bias $\lvert p_A - p_B \rvert$	*More Uninformed* $\frac{3}{8}$	*Even* $\frac{2}{8}$	*Less Uninformed* $\frac{1}{8}$
Large (More A) $\frac{2}{8}$	*Mix Voting B and Abst.*	*Vote B*	*Vote B*
Small (More A) $\frac{1}{8}$	*Mix Voting B and Abst.*	*Mix Voting B and Abst.*	*Vote B*
None	*Abstain*	*Abstain*	*Abstain*
Small (More B) $\frac{1}{8}$	*Mix Voting A and Abst.*	*Mix Voting A and Abst.*	*Vote A*
Large (More B) $\frac{2}{8}$	*Mix Voting A and Abst.*	*Vote A*	*Vote A*

informed independent voters has to make their decisions based only on the given knowledge, and these knowledges are inadequate to make predictions based on SVC model. On the other hand, bandwagoning model do provide prediction that to follow the majority preference.

Thus, we predict SVC model to have more explanatory power to predict the behavior under polling treatment, and bandwagoning model to have more power in predicting the behavior under social interaction treatment.

In addition, if I am able to conduct the experiment in both United States and Japan, it is expected to see more of the bandwagoning behavior in Japan than in United States. Research in cultural psychology suggests high-level of collectivism in East Asian countries compared to the North American countries (Markus and Kitayama 1991). *More explanation here...*

5 Analytical Strategy

Explanations...

6 Discussion

In sum, the current experiment intends to examine the potential behavior of uninformed voters in election. Given that conventional voting participation model (Downs 1957, Riker and Ordeshook 1968, Matsusaka 1995) does not provide expectations on how they behave after the participation, I utilize *Swing Voter's Curse* (SVC) model and bandwagoning model to make those predictions.

In contrast to the previous practices of highly stylized experiment, I designed my experiment to be more meaningful simplification of real-world electoral decisions. I manipulate the important theoretical parameter which was never manipulated in the previous experiments. I also introduce the logic behind potentially

important role of common knowledge channels. In addition, if possible, I am interested in conducting the identical experiment in both Japan and United States. Here, The collectivistic and individualistic cultural background may lead to the different types of behavior under limited information.

The result will significantly contribute to the understandings toward the mechanisms of the relationship between individual level of information, election environment, voting participation and vote choice. Previous studies rarely provide the logical explanation of the uninformed voting behavior. If uninformed voters make logical decisions to participate and vote in elections conditional on the surrounding environment, the conventional wisdom of uninformed involved in random behavior is not necessarily true. By providing systematic explanations of uninformed behavior, this experiment would deeper understanding toward the potential competence of voters under democracy.

References

Bartels, Larry M. 1996. "Uninformed Votes: Information Effects in Presidential Elections." *American Journal of Political Science* 40(1):pp. 194–230.

Bassi, Anna, Rebecca B. Morton and Kenneth C. Williams. 2011. "The Effects of Identities, Incentives, and Information on Voting." *The Journal of Politics* 73(2):pp. 558–571.

Battaglini, Macro, Rebecca B. Morton and Thomas R. Palfrey. 2010. "The Swing Voter's Curse in the Laboratory." *The Review of Economic Studies* 77(1):pp. 61–89.

Battaglini, Marco, Rebecca B. Morton and Thomas R. Palfrey. 2008. "Information Aggregation and Strategic Abstention in Large Laboratory Elections." *The American Economic Review* 98(2):pp. 194–200.

Bischoff, Ivo and Henrik Egbert. 2013. "Social Information and Bandwagon Behavior in Voting: An Economic Experiment." *Journal of Economic Psychology* 34:270 – 284.

Delli Carpini, Michael X. and Scott Keeter. 1996. *What Americans Know About Politics and Why It Matters*. New Haven: Yale University Press.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Brothers.

Feddersen, Timothy J. and Wolfgang Pesendorfer. 1996. "The Swing Voter's Curse." *The American Economic Review* 86(3):pp. 408–424.

Gemenis, Kostas and Martin Rosema. 2014. "Voting Advice Applications and Electoral Turnout." *Electoral Studies* 36:pp. 281–289.

Larcinese, Valentino. 2007. "Does Political Knowledge Increase Turnout? Evidence from the 1997 British General Election." *Public Choice* 131(3):pp. 387–411.

Lassen, David Dreyer. 2005. "The Effect of Information on Voter Turnout: Evidence from a Natural Experiment." *American Journal of Political Science* 49(1):pp. 103–118.

Markus, Hazel R and Shinobu Kitayama. 1991. "Culture and the Self: Implications for Cognition, Emotion, and Motivation." *Psychological Review* 98(2):224.

Matsusaka, John G. 1995. "Explaining Voter Turnout Patterns: An Information Theory." *Public Choice* 84(1):pp. 91–117.

Riker, William H. and Peter C. Ordeshook. 1968. "A Theory of the Calculus of Voting." *The American Political Science Review* 62(1):25–42.

Yamazaki, Arata. 2008. "Seiji Chishiki ga Tohyo Sanka ni Ataeru Eikyo – GLOPE2005 Deta niyoru Jissho Bunseki [The Impact of Political Knowledge on Voting Participation – The Empirical Analysis by GLOPE2005 Data]." *Waseda Seiji Koho Kenkyu* 88(88):pp. 1–10.

Zaller, John R. 1992. *The Nature and Origins of Mass Opinion*. New York: Cambridge University Press.