# Conformity in the Lab

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Abstract. We use a revealed preference approach to disentangle conformity, an intrinsic taste to follow others, from information driven herding. We provide observations from a series of experiments of sequential decision making in which subjects *choose* the type of information they observe before making their decision. Namely, subjects choose between observing a private (statistically informative) signal or the history of play of predecessors who *have not* chosen a private signal (i.e., a statistically uninformative word-of-mouth signal). In our setup, subjects choose to observe the statistically uninformative social signal 34% of the time. When allowing for payoff externalities by paying subjects according to the collective action chosen by majority rule, the results amplify and the social signal is chosen in 51% of all cases. The results from the majority treatment demonstrate that conformist behavior is not driven by inequality aversion. Furthermore, raising the stakes five-fold does not eliminate conformist behavior; in both treatments, the social signal is chosen nearly 50% of the time. Individual level analysis yields the identification of rules of thumb subjects use in making their decisions. Finally, the majority treatments in our design allow us to study the extent of strategic voting in our context.

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## 1. INTRODUCTION

Understanding the formation of herds is relevant in a variety of economic environments, ranging from voting behavior to financial market investments. The literature on herd formation is split into two strands of work. The psychology literature (see initial studies of Sherif, 1937 and Asch, 1958) suggests a preference based explanation in which agents exhibit conformity, an intrinsic taste to follow others. In contrast, the economics literature (see Banerjee, 1992 and Bikhchandani, Hirshleifer, and Welch, 1992) has proposed an information based model in which agents opt to ignore private signals and follow their predecessors' choices when the latter provides a stronger statistical indication as to the best course of action. In such a setting, agents who appear to be blindly following their peers may simply be best responding.

The goal of the current paper is twofold. First, to disentangle conformity from information based herding and inequality aversion. Specifically, to determine whether conformity plays a significant role in economic environments. Second, to establish the effects of institutions on the prevalence of conformist behavior. In particular, we explore the impacts of payoff externalities and incentive magnitude on conformist behavior in the lab.

Our experimental design allows subjects to *choose* between observing a statistically informative signal and the history of choices of preceding players who themselves chose to observe the history of choices of predecessors who chose the history of choices, etc. That is, subjects choose between a statistically informative signal and a *pure word-of-mouth* signal.

When subjects are paid according to their decision alone (a high amount when their choice matches the underlying uncertain state and a low amount otherwise), a significant fraction (34%) chooses to observe the word-of-mouth signal. Furthermore, subjects are significantly more inclined to turn down the statistical signal when they are located later in the sequence.

While the high percentage of agents turning down statistical information is both astounding and consistent with the notion of conformity, it could also be explained with a model of inequality aversion (e.g., Fehr and Schmidt, 1999). That is, if subjects have an intrinsic

aversion to getting payoffs that are at the tails of the payoff distribution, others' previous choices may be useful in ascertaining their optimal actions. In about half of our experimental sessions, subjects in each group are paid identical amounts determined according to whether the *majority guess* matched the underlying state or not. As a result, subjects' payoffs are inherently equal within their group so inequality aversion cannot play a role. In these sessions, about 50% of the subjects turned down the informative signal.

There is another interesting layer to the majority choice treatment which pertains to the levels of sophistication and strategic behavior subjects exhibit. Indeed, if subjects realize that some of their peers are herding uninformed on one option, they may have an incentive to choose the *other* option in order to *balance* these "noise voters" and give the power of vote to the informed subjects who choose the statistical signal. This is, in essence, the underlying intuition of the literature on strategic voting (see, e.g., Fedderson and Pesendorfer, 1996). In our treatment, only 23% of those choosing to observe the history of choice behaved in a contrarian manner, voting against the option appearing to obtain the majority support. Consequently, there is great imbalance of choices amongst subjects who observe the word-of-mouth signal. In particular, we see very limited support for strategic behavior.

There are several experimental contributions to the literature on information cascades that tie directly to the current paper.[1] Our experimental design is similar in spirit to that used in Anderson and Holt (1997) and Hung and Plott (2001) in order to test experimentally the original informational cascade model of Bikchandani, Hirshleifer, and Welch (1992). Ultimately, both these papers illustrate the prevalence of cascades in the presence of information, and the sensitivity of cascade formation to the institution used to aggregate group choices (in particular, under majority rule, Hung and Plott, 2001, illustrate that fewer cascades form). However, in both of these papers, both social and statistical information are always provided and are not objects of choice.

The paper also relates to a few recent papers exploring information acquisition in the context of social learning. In Kubler and Weizsacker (2004) subjects faced common un-

[1]For general surveys of social learning, see Gale (1996), or Bikhchandani, Hirshleifer, and Welch (1998).

certainty and were required to decide sequentially whether or not to make an investment whose return depended on the common realization of uncertainty. In addition to observing their predecessors, subjects had access to a costly information source. Experimental subjects invested excessively in information relative to equilibrium predictions. Interestingly, when we pose the choice in terms of information sources, subjects choose too little statistical information for payoff maximization. In a similar spirit, Çelen, Choi, and Hyndman (2005) studied information acquisition in the context of networks. Their subjects received a free signal on the underlying state, and could observe predecessors' actions for a fee. An agent who had access to only one other agent could gain nothing by observing that agent's first period choice (as it encompassed information from only one signal). Nonetheless, 25% of the subjects were reported to have paid the fee to observe their predecessor. These results are consistent with the observations reported in the current paper. In fact, we illustrate that even when predecessors' actions hold *no information* at all, agents are willing to forego statistical information in order to observe historical choices.

The paper is organized as follows. In Section 2 we describe our experimental design. Section 3 describes the aggregate analysis of the results, while Section 4 provides the corresponding individual analysis. Section 5 concludes. An Appendix contains a collection of subject quotes regarding their experimental choices.

## 2. Experimental Design

The underlying experimental design is reminiscent of that of Anderson and Holt (1997) and Hung and Plott (2001). There is a "red" jar and a "blue" jar: the red jar contains seven red and three blue balls and the blue jar contains seven blue and three red balls. At the start of each period, one of the jars is chosen by a toss of a fair coin. The goal of the subjects is to guess the jar that has been chosen. Specifically, subjects make their guesses sequentially as follows:

**Subjects 1-3 (history condition)** each observes her predecessors' actions and no other information before making her guess.

**Subjects 4 and on (choice condition)** each gets to choose whether to observe *history*, the actions chosen by all agents who were in the *history* condition (by choice or by design), or a *private signal*, as manifested by a draw with replacement from the selected jar. The decisions of those that choose private signal are *not* recorded in *history*, which captures only the decisions of those that choose *history*.

Thus, starting from subject 4, each subject faces a choice between a (statistically uninformative) word-of-mouth signal and a (statistically informative) private signal. This process is repeated for 10 periods, in each of which subjects' roles (their locations in the sequence) are randomly determined.

There are two treatments: *Individual Choice* and *Majority Choice*, which we now describe.

**Individual Choice** There are no payoff externalities between subjects' guesses. Each subject receives \$1 if she correctly guesses the chosen jar and \$0.10 otherwise.

**Majority Choice** We determine the jar that got a (simple) majority of guesses at the end of each period and give *all* subjects \$1 if the majority guess is correct and \$0.10 otherwise.

In order to examine the effects of incentive size, we also repeated our two treatments with stakes that were 5 times higher. That is, \$5 for correct (individual or majority) guesses and \$0.50 for incorrect ones.[2] In addition, subjects were paid \$5 for showing up. To summarize, our experiments followed a $2 \times 2$ design, where the existence of payoff externalities (individual or majority choice) and the size of the stakes were varied.

Sessions were run at the California Social Science Experimental Laboratory (CASSEL) at UCLA, with a total of 218 subjects.[3] Table 1 summarizes the set of experimental sessions

[2]We note that the \$1 - \$0.10 stakes are actually of standard magnitude used in the social learning experimental literature in recent years (see, e.g., Celen and Kariv, 2004, Hung and Plot, 2001, etc.).

[3]The slides used during the instruction phase of the experiments can be found at http://www.hss.caltech.edu/~lyariv/Research.htm.

| Treatment | Stakes | Number of Sessions | Number of Subjects |
|---|---|---|---|
| Individual | Low ($1, $0.1) | 5 | 72=15+15+15+15+12 |
| Individual | High ($5, $0.5) | 3 | 45=14+15+16 |
| Majority | Low ($1, $0.1) | 4 | 58=15+15+15+13 |
| Majority | High ($5, $0.5) | 3 | 43=15+15+13 |

Table 1: Experimental Design

for each of the treatments (the number of subjects is described as a sum, where summand $i$ corresponds to the number of subjects used in session $i$ of the relevant treatment).

On average, subjects were paid $11.11 and $31.00 in the individual treatments under low and high stakes, respectively, and $12.48 and $32.29 in the majority treatments under low and high stakes, respectively.

## 3. Results - Aggregate Data

The focus of our study pertains to agents' choice of information. Since subjects $1-3$ were provided the history of actions and not given a choice regarding what information they desired, we restrict most of the analysis to the final 12 decisions in the sequence. We start by analyzing the data from the individual treatments, suggesting agents do not simply maximize monetary returns. We then report results from the majority treatments that help us study the effects of externalities on information choices, as well as rule out explanations such as inequality aversion for the apparent conformist behavior observed in the lab. In addition, we are able to identify the extent of sophisticated game theoretic behavior in the voting context.

**3.1. Individual Choice Treatments.** Of course, maximization of expected payoffs in the individual choice treatments would entail all agents choosing a statistically informative signal when having the option to do so, and following their signal with their guess. That is, choosing the red jar if a red ball was sampled, and choosing the blue jar otherwise. Consequently, our first hypothesis is:

**Hypothesis 1 (Informational Herding)** *The fraction of subjects choosing* history *in the individual treatment is zero.*

**Results.** The final 12 decisions in all periods of the individual choice treatments translate into 540 decisions with low stakes and 360 decisions with high stakes. The upper panel of Table 2 summarizes the results from the individual choice treatments. As can be seen, 34% of the subjects in the low stakes sessions and 50% of the subjects in the high stakes sessions chose to observe history, and both these figures are significant at any reasonable level. Note that restricting the data to the last four periods in all sessions does not produce significantly different levels of history choices, suggesting our results are not driven by confusion nor are they significantly mitigated by learning.[4] Thus, Hypothesis 1 is rejected.

There are several points to note. First, note that subjects incurred significant monetary losses by selecting to observe history. Indeed, the per period average loss relative to potential per period returns (achieved if subjects were to observe statistical signals and follow them) was 10¢ in the low stakes treatment and $1 in the high stakes treatment. Particularly in the high stakes sessions, these losses translate into subjects forgoing a significant percentage of their experimental wage.

Second, and somewhat puzzling to us, is the fact that conformist behavior is more frequent in the high-stakes treatment (using the Wilcoxon two-sample test we find that the samples differ with probability of 93%). This is intriguing in view of the amount of money left on the table in both treatments and reminiscent of the type of payoff insensitivity observed in other social learning experiments.[5]

[4]We were particularly concerned about subjects' confusion. In the end of each session, we asked subjects to explain in their own words the strategies they used throughout the experiment. We then employed a research assistant to try and ascertain which subjects appeared confused. Note that subjects have self-protection motives to justify leaving money on the table (see below), and thus any confusion measure based on unpaid self reports is most probably an over-estimate. Nonetheless, using a harsh criterion of classifying a subject as confused if *anything* in his or her description is inaccurate, history choices remain above 15% across all sessions and significantly greater than 0.

[5]Anderson (2001) systematically varies the payoff scale in social learning experiments similar to ours (in her experiment all subjects receive a statistical signal by design). She finds no systematic effects of changing payoff magnitudes unless the incentive payments are removed entirely.

| Treatment | Stakes | Fraction of History Choices | | Average Profit | Potential Profit |
|---|---|---|---|---|---|
| | | Periods 1-10 | Periods 7-10 | per Period | per Period |
| | Low ($1, $0.1) | 0.34 | 0.32 | $0.61 | $0.72 |
| | | (0.02) | (0.03) | (0.02) | (0.02) |
| Individual | | t= 17.14 | t=10.24 | | |
| | High ($5, $0.5) | 0.5 | 0.44 | $2.65 | $3.65 |
| | | (0.03) | (0.04) | (0.12) | (0.12) |
| | | t=19.23 | t=10.55 | | |
| | Low ($1, $0.1) | 0.51 | 0.48 | $0.75 | $0.98 |
| | | (0.02) | (0.04) | (0.02) | (0.004) |
| Majority | | t=21.71 | t=13.09 | | |
| | High ($5, $0.5) | 0.43 | 0.41 | $2.72 | $4.40 |
| | | (0.03) | (0.04) | (0.12) | (0.08) |
| | | t=16.38 | t=9.72 | | |

Numbers in parentheses correspond to standard errors

Table 2: Aggregate Statistics

We note that of the subjects who choose to observe the statistical signal subjects behave nearly optimally. Indeed, 91% (92%) follow the guess corresponding to the observed signal in the low (high) stakes treatment.

While the data observed from the individual choice treatments is consistent with subjects acting on conformist motives, intrinsic tastes to follow others, they are also consistent with some form of *inequality aversion.* That is, if subjects are averse to receiving either higher or lower payoffs than some function of the moments of the experimental distribution (Fehr and Schmidt, 1999), they may indeed be willing to forego statistically useful information as in our data. The majority treatments described next offer a clean control for any form of inequality aversion as, by definition, all subjects within a specific session received the same exact payoff.

**3.2. Majority Choice Treatments.** While in the individual choice treatments the optimal and dominant payoff maximizing behavior is to observe the statistical signal and follow it, more subtle strategic considerations arise in the majority treatments. Intuitively, conditional on choosing *history* under the majority treatment, strategic subjects aiming at maximizing

their monetary payoffs should try to balance out the uninformed choices by going against the majority choice. This way, the informed subjects, who observe a private signal prior to voting, will have more voting power. Indeed, the intuition driving some of the underlying results in the strategic voting literature (see, e.g., Feddersen and Pesendorfer, 1996) suggests that sophisticated subjects who realize some of their peers select history of play and blindly follow the majority, may have an incentive to choose history of play and go *against* the majority.

Let $n$ denote the odd number of voters. To glean some insight into the equilibria of this strategic game, suppose individuals 1 trough $n-2$ have chosen history of play and the vote lead for one of the options is 1.[6] The next-to-last voter can either select history to balance the vote count or vote on the basis of a private signal. In the former case, the final voter chooses a private signal and votes accordingly, and the probability with which the group is correct is equal to the signal precision $q = .7$. In the latter case, the final voter is indifferent between choosing history to balance the vote count of those that chose history or choosing a private signal and voting accordingly: either way the probability with which the group is correct is $q = .7$.[7] To summarize, there may be an even or odd number of voters choosing history but there will be at least one voter who votes according to a private signal. This example provides the intuition for the following characterization of informative equilibria, i.e. equilibria in which some statistical information is utilized.[8]

**Proposition (Equilibria Characterization)** *In any informative equilibrium, at least one subject votes according to a private signal. Subjects choosing to observe history balance their votes such that neither option has a vote lead of more than 1.*

[6] If the vote lead for either alternative is 3 or more after these $n-2$ votes, the majority is determined and the probability with which the group selects the correct alternative is only .5.

[7] When the final two voters choose private signals the chance that the group is correct is $\frac{1}{2}q^2 + \frac{1}{2}(q^2 + 2q(1-q)) = q$, where the first (second) term on the left side corresponds to the case where the (in)correct option has a vote lead of 1 among those that chose history.

[8] In addition to the informative equilibria characterized by the proposition there also exist uninformative equilibria in which voters use weakly dominated strategies, e.g., everyone choosing a statistical signal and then voting blue.

Clearly, the most efficient equilibrium entails at most one subject observing history in the majority treatment. This holds even if subjects are inequality averse, unlike in the individual treatment. Consequently,

**Hypothesis 2 (Inequality Aversion and Efficiency)** *The fraction of subjects choosing history in the majority treatment is at most 1/12.*

**Results.** There were 460 decisions in the last 12 periods of the low stakes sessions and 340 decisions in the last 12 periods of the high stakes sessions. The bottom panel of Table 2 contains the aggregate statistics germane to the majority treatment.

Clearly, history choices were significantly more prevalent than 1/12 for both the low stakes and the high stakes sessions, at any reasonable confidence levels. In the low stakes sessions, 51% of the decisions entailed the observation of history, while for the high stakes sessions, the analogous figure is 43% (both of the same order of magnitude as observed in the high stakes individual treatments). As before, these observations are robust to restricting the data to the last four periods within each session. Furthermore, both the mean and the median number of history choices per group decision was 9 in the low stakes sessions and 8 in the high stakes sessions (see top panel of Table 3 below). Thus, Hypothesis 2 is rejected. The results cannot be explained by an inequality aversion model, nor do the subjects seem to be playing the most efficient equilibrium.

It is worth noting that within each group, subjects had the potential for significant collective information (with 15 subjects there are 12 signals of accuracy $q = .7$). In particular, the gap between the average per period payoff and the potential per period payoff that would have been generated had subjects collectively followed the most efficient equilibrium strategies, is even starker than in the individual treatments. In the low stakes treatments this gap was 23¢, while in the high stakes treatment, the gap was \$1.68 per period!

Of course, subjects may not be following the most efficient equilibrium, but still behave in a sophisticated manner. The Proposition suggests that history profiles should be (almost)

| Stakes | Number of Subjects Choosing History | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **Mean** |
| Low ($1, $0.1) | - | - | - | 0 | 1 | 3 | 3 | 2 | 6 | 9 | 7 | 5 | 4 | 8.8 |
| High ($5, $0.5) | - | - | - | 0 | 0 | 1 | 3 | 6 | 10 | 8 | 2 | 0 | 0 | 7.9 |
| | **Absolute Difference between Choices within History** | | | | | | | | | | | | | |
| | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **Mean** |
| Low ($1, $0.1) | 0 | 7 | 3 | 2 | 5 | 6 | 7 | 2 | 2 | 1 | 4 | 1 | 0 | 5.0 |
| High ($5, $0.5) | 1 | 5 | 6 | 1 | 5 | 5 | 1 | 4 | 2 | 0 | 0 | - | - | 3.8 |

Table 3: Characteristics of History Profiles

balanced in *any* equilibrium, so that the power of vote is given to those who are statistically informed. Thus, we can test for strategic sophistication through the following Hypothesis.

**Hypothesis 3 (Strategic Voting)** *In the Majority Choice treatment, history profiles are (almost) balanced, i.e., neither option has a vote lead of more than 1.*

**Results.** The lower panel of Table 3 summarizes the results regarding the frequency of all possible differences between choices of Red and Blue. Under the low stakes treatment, no history profile was balanced and only 7 out of 40 had an imbalance of one vote. Under the high stakes treatment, 1 out of 30 profiles ended up being balanced and 5 out of 30 had an imbalance of precisely one vote. In fact, the mean absolute difference between the two possible guesses under the low stakes treatment was 5, while under the high stakes treatment it was 3.8. On the individual level, these observations translate to very few subjects choosing the option contrary to the majority after selecting history (e.g., in the low stakes treatments, only 23% of the subjects who chose to observe the word-of-mouth signal chose the less common action). In summary, Hypothesis 3 is rejected.

The extent to which there is imbalance within the history profile is certainly related to the length of history. For one, this difference is bounded by the number of subjects choosing to observe history overall. Figure 1 illustrates the link between the observed imbalance and the length of history profiles. In particular, for any number of subjects choosing to observe history, the figure illustrates the average imbalance of votes within the history profile. One

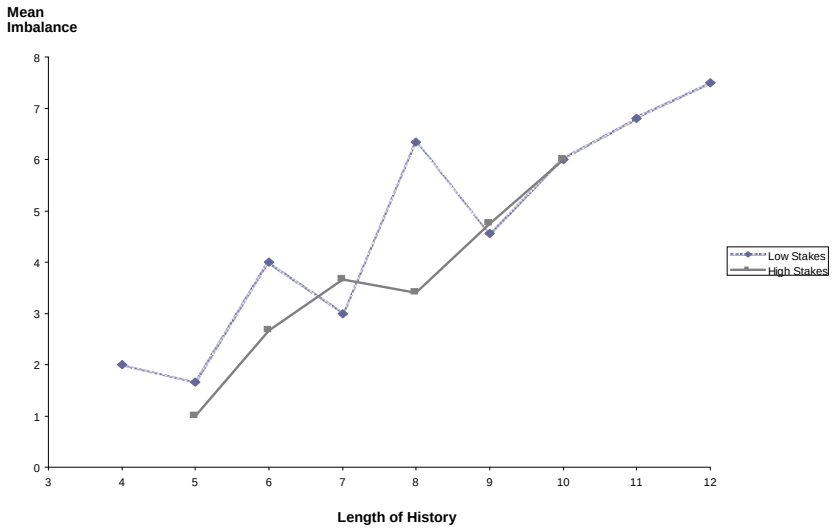


Figure 1: Mean Imbalance as a Function of the Number of Subjects Choosing History

can see that longer histories are characterized by lower rates of "almost balanced" histories.[9]

We note that upon choosing to observe a statistical signal, agents follow the signal with high percentages: 96% in the low stakes condition and 91% in the high stakes condition. Thus, the deviation from equilibrium behavior cannot be explained by the choices made by subjects who observe the statistical signals.

## 4. Individual Analysis

We now turn to the individual analysis of our data. Figure 2 depicts the distribution of individual frequencies pooled from all treatments. As can be seen, there are significant masses of subjects at the extremes, choosing either to observe the statistical signals or the uninformed historical choices nearly always. The distributions corresponding to the different treatments are similar in shape. For instance, in the low stakes sessions, under the individual treatments, 35 of 72 subjects chose to observe the social history no more than 25% of the time, while 10 of 72 chose to observe the social history no less than 75% of the time. Under

[9]This is consistent with the original conformity experiments reported in Asch (1958) in which the number of confederate subjects reporting a wrong answer affected positively the propensity of the real subjects to follow suit.

the majority treatments, 20 of 58 subjects chose to observe the social history no more than 25% of the time, and 20 of 58 chose to observe the social history no less than 75% of the time.[10]

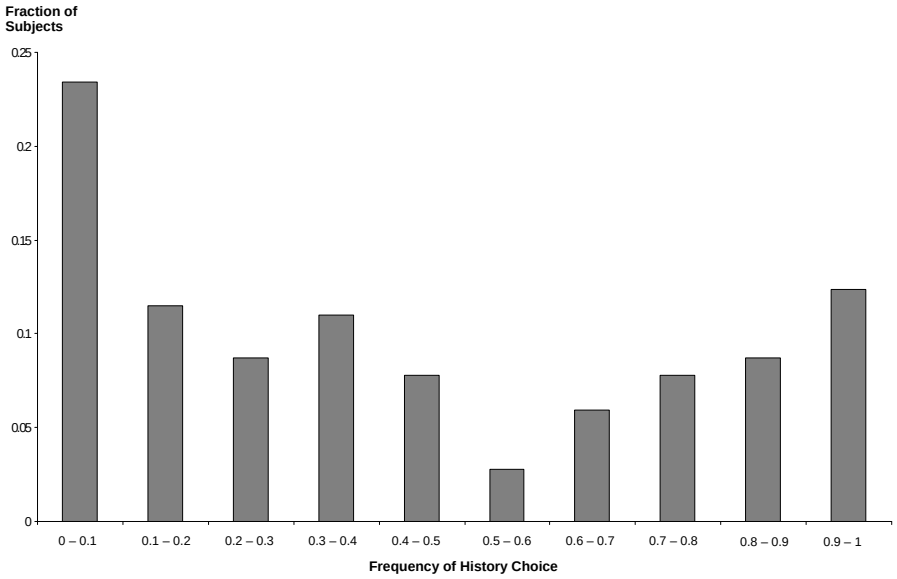


Figure 2: Distribution of Individuals According to Frequency of History Choices

One simple heuristic that seems to be used by our subjects relates to their location within the sequence. Indeed, subjects appear to be more prone to observe the word-of-mouth uninformative signal the further they are in the sequence. Figure 3 depicts the frequency of history choices as a function of the location of subjects within the treatments, as well as the estimated line corresponding to the pooled data from all treatment (of slope $0.031 \pm 0.003$).

The correlation between history choices and the location within the sequence of decision makers does not differ significantly across treatments and sessions.[11] The upward trend

[10]It is worth noting that neither gender nor academic major had significant explanatory power regarding individual choices.

[11]Linear or probit regressions yield similar confirming results. Consider the low stakes sessions. In the Individual Choice treatment, regressing a choice dummy (1 when history was chosen, 0 when a private signal was chosen) on location yields a coefficient of $0.033 \pm 0.006$ while in the Majority Choice treatment this coefficient is: $0.034 \pm 0.007$. Similarly, for the high stakes treatments the corresponding coefficients are $0.025 \pm 0.007$ for the Individual Choice treatment and $0.027 \pm 0.008$ for the Majority Choice treatment.

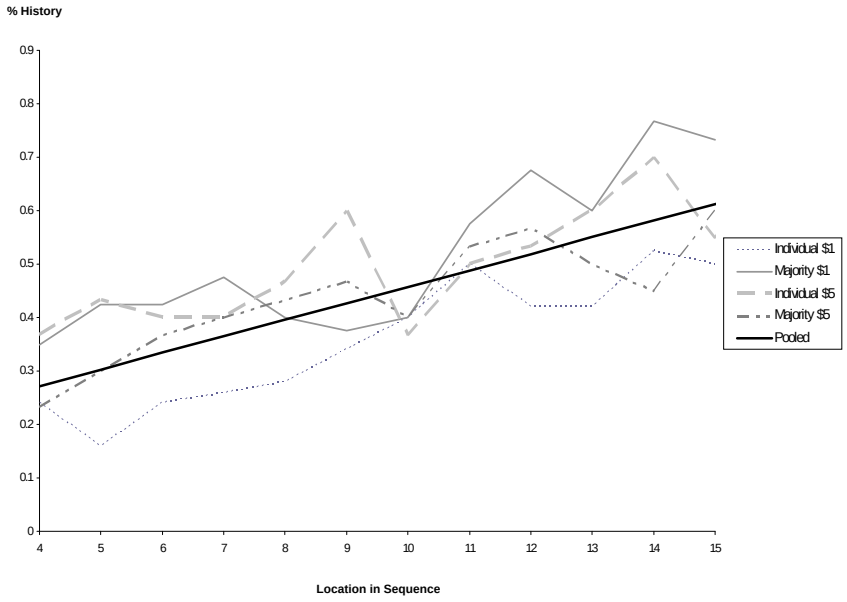


Figure 3: Fraction of Individuals Choosing History as a Function of Location in the Sequence

apparent in Figure 3 provides further evidence for conformist behavior. If agents possess an intrinsic taste to follow others and, say, care about the action taken by a majority of their peers, the value of looking up the social history of actions indeed increases later in the sequence of play.

## 5. CONCLUSIONS

We report results from several simple experiments disentangling information-based herding from an intrinsic taste to follow others. Using a revealed preference approach, we allowed subjects to *choose* between social information void of any relevant statistical information regarding the problem at hand and an informative statistical signal. A significant percentage of subjects choose to observe the social information. Externalities, learning, or increased stakes do not mitigate the results. In particular, the motives to "conform" appear to outweigh both individual and strategic voting motives.

Following others may be a very sensible rule of thumb in many contexts of real life and

so may make sense as a decision making short-cut in various circumstances. Nonetheless, in many situations, this rule of thumb may be rather costly in terms of individual payoffs (as when considering stock market investments) or collective welfare (as in common-value elections), and suggests a potential new read of some of the germane empirical literature.

## 6. Appendix - Subject Quotes

The following are verbatim quotes from subjects' statements. The parentheses indicate which treatment each of the quotes was taken from.

"After choosing 'signal' twice, it proved unreliable as to telling me what the true jar was, so I chose 'history' instead, which was usually more accurate." (majority)

"I chose history a majority of the time because I wanted to see how other people made decisions..." (majority)

"I chose signal because I rely on statistics..." (majority)

"If I was toward the end of the sequence, it didn't matter what I chose really, b/c the majority had already guessed. That's why I chose 'History'..." (majority)

"Initially, I'm curious about how other people select the color, later I found that 's' is more useful." (majority)

"Choose 'signal' instead of 'history' because 's' is more trustworthy which is based on statistics (chance) with 70% chance. For 'History' it is just a wild guess of people, with 50% correct..." (individual)

"I solely used History because my decision was based on other people's choices. It was easier to make my decision in that way." (majority)

"I chose signal because I believed the signal that the computer gave me was true." (majority)

"History helps to get the main trend while private signal doesn't really give useful information." (majority)

"I originally chose 'signal' thinking the odds would be in my favor, but after being wrong 2 of 3 times I tried 'history of play' and went along with the majority of the group." (individual)

"Although signal would be the best mathematically based choice, History allowed me to feel confident in my selection because I knew others had selected it as well. As I see it, History provides you with NO help in picking a jar." (individual)

"I chose history each time I was able to. I did this because it seemed the most democratic..." (individual)

"Chose history at later rounds so that I can help solidify majority of choice." (majority)

"At first, I wasn't interested in others' choice and that's why I chose 'signal'. Anyway, I was curious about others' opinions and began to choose 'History'." (individual)

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