The Politics of the Slippery Slope

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Abstract

Slippery slope arguments — the idea that otherwise beneficial reforms should be rejected lest they beget further undesirable one — are ubiquitous in political discourse. We provide a learning-based policy-feedback mechanism to explain why slippery slope dynamics arise. Additionally, we provide conditions under which, in equilibrium, sophisticated agents will successfully manipulate policy to either induce or prevent a slippery slope dynamic.

Key Words: Slippery slope, Learning, Policy momentum.
1 Introduction

'Slippery slope' arguments are commonly invoked in political discourse. They express the idea that even though a policy may desirable on its own merits, it should nevertheless be rejected because of the fear that its adoption will cause more extreme (and undesirable) policies to arise in the future.\footnote{For examples of slippery slope arguments, see Dent (1999) and Kurtz (2003) on same-sex marriage, Nix (2012) and Somin (2012) on the Affordable Care Act mandate, and Volokh (2003) for an exhaustive primer.}

The public discourse surrounding the Affordable Care Act (ACA) provides a useful case study. Despite largely mirroring a proposal from the conservative Heritage Foundation, and notwithstanding its adoption by a Republican administration in Massachusetts, the ACA did not command the support of congressional Republicans, and was even met with suspicion by conservative Democrats. For example, during negotiations over the bill, Democratic Senator Ben Nelson expressed opposition to a proposed Medicare buy-in worrying that it would be a “forerunner of single payer” healthcare (Raju, 2009). His concern was not unfounded. After the ACA had passed, then Democratic Senate Majority Leader Harry Reid confirmed that his goal was “absolutely” to transition the ACA to a single payer system (Roy, 2013).

The consideration by courts of the legality of the ACA also raised slippery slope concerns. Justice Antonin Scalia famously worried that, absent a clear limiting principle, a government mandate to buy health insurance today would invite future governments to mandate the purchase of more mundane items such as broccoli.

Both examples have the feature that the immediate policy in question acts as a stepping stone that makes possible a more extreme policy, which would be politically infeasible to implement directly today, but which might become feasible as the public becomes accustomed to the moderate change. The slippery slope dynamic is generated by policy feedback: experience with a moderate policy may cause the public to re-evaluate their beliefs about the value of that reform, and potentially demand even more of it. This insight reflects Schattschneider's
(1935) aphorism that ‘a new policy creates a new politics’.

Implicit in the logic of policy feedback is the idea that agents learn about the value of certain policies as they interact, and become acquainted with, those (or similar) policies. Experience with ACA programs, for example, has been shown to positively influence agents’ opinions about the ACA, as well as other governmental healthcare schemes, such as Medicare (see Campbell, 2020; Jacobs & Mettler, 2018; Lerman & McCabe, 2017).\(^2\) There is strong empirical evidence that policy feedback occurs in many other contexts, and we summarize this literature later in this section. Importantly, the literature finds that the extent of this feedback depends on a range of factors, particularly the size, scope and import of the policy, and the likelihood that agents experience or engage with it directly.

In this paper, we address two questions. First, we explore a particular mechanism that explains why a slippery-slope dynamic — in which a moderate reform today begets a more extreme reform in the future — might arise. Second, we investigate the conditions under which (some) agents’ awareness of this policy feedback dynamic might create an incentive to strategically manipulate policy to either induce or prevent the feedback dynamic from arising.

To answer these questions, we present a simple stylized model of public goods provision under majority rule. Agents are distinguished by their income; a majority have low income whilst the remainder have high income. Low income earners have a higher demand for the public good than high income earners, and this generates the baseline political disagreement between the groups.

Additionally, each agent may either be correctly informed about the value of the public

\(^2\)The following papers study specific channels through which this policy feedback arises: Jacobs and Mettler (2016), McCabe (2016), Pacheco and Maltby (2017), Hopkins and Parish (2019), Hobbs and Hopkins (2021), Sances and Clinton (2021). Jacobs and Mettler (2018) note, for example:

The most striking substantive pattern is that policy feedback effects are occurring. Even with potent controls, individuals who experience tangible changes in their insurance coverage or medical care adopted a more salutary view of the law’s impact on access.
good, or misinformed. We focus most attention on the case where misinformed agents undervalue the public good; so that misinformed agents express a lower demand than their informed counter-parts would. This reflects the public’s typical skepticism towards projects and reforms with which they are unfamiliar. We discipline the model by assuming that a majority of agents are informed — so that our results are not purely driven by misinformed majorities. Importantly, though a majority are poor and a majority are informed, we assume that the informed poor are a minority.\footnote{If they were a majority, then they would constitute a decisive coalition in their own right, and there would be no interesting political economy analysis.}

Misinformation has two effects: First, the median voter’s preferred level of public goods provision will be below that of the informed poor. There will be policy ‘skepticism’ relative to the ‘correct information’ baseline. Second, the preferences of the misinformed poor and the informed rich are more closely aligned, and these groups may potentially form a cohesive voting bloc, even though they would intrinsically express divergent preferences were they all correctly informed.

Agents may learn about the true value of public good by acquaintance. We consider a very simple learning technology wherein agents learn the correct value of the public good whenever it is provided in a sufficiently large quantity to be consequential to their utility. This is consistent with empirical findings, noted above, that learning about policy is strongest when the policy is salient and visible to the agent.

Taken together, these features of our model imply several noteworthy results. First, if learning occurs in some period, it causes the ranks of the informed to grow, which increases future social demand for the public good,\footnote{If they were a majority, then they would constitute a decisive coalition in their own right, and there would be no interesting political economy analysis.} ceteris paribus. Learning shifts political power between the different groups. This dynamic precisely captures Schattschneider’s insight that ‘a new policy creates a new politics’. This is the slippery-slope dynamic at work. A moderate policy today combined with a skeptical public who can learn from acquaintance, induces a
more extreme policy tomorrow. Policy momentum arises endogenously, as a consequence of learning by acquaintance.

Second, since the slippery slope dynamic hurts the informed rich (by moving policy further from their ideal), they have an incentive to downwardly distort policy to prevent learning. To be successful, the informed rich must enlist the support of the misinformed poor, to build a majority coalition around this distorted policy. But this can only occur if the ideal policy of the misinformed poor is even lower than that of the informed rich (absent strategic considerations). Thus, strategic manipulation of policy will only occur if misinformation creates a larger wedge in policy preferences between the informed and misinformed poor than is the wedge between the informed rich and informed poor, ensuring that a natural alliance exists between the informed rich and misinformed poor against the informed poor.

Of course, distorting policy is costly to the informed rich, and so the incentive to behave strategically extends only as far as the benefits from preventing learning exceed the costs. In the context of our model, this will occur when the distortion needed to prevent learning is not too large.

The logic of strategic behavior necessarily requires that some agents are forward looking, and understand the policy dynamic that arises when there is learning by acquaintance. Our third result suggests a complement to this insight: the ability of some agents to strategically manipulate policy is limited by the degree of sophistication of other agents, and their awareness of being manipulated. The informed rich will be most able to strategically prevent the slippery slope dynamic when sufficiently many misinformed agents are naive. By contrast, if the misinformed poor are sophisticated in sufficient numbers, then opportunities for strategic manipulation will disappear. Moreover, the competing incentives to manipulate and prevent manipulation will often result in policy incoherence, where no stable equilibrium policy exists.

In light of the motivating example, the public finance setting is a natural one to study the
interplay between beliefs, intrinsic preferences (captured by income), and policy. However, the model’s insights can be extended beyond this narrow setting. What is important is the interaction between the nature of misinformation and the learning technology, such that those who seek to strategically prevent learning can make common cause with the misinformed.

As a counter-point, we note that neither policy momentum nor policy distortion arise if the misinformed overvalue the public good, and are thus optimistic (rather than skeptical) of the policy reform. The reason is that the political incentives now pull in opposite directions; the informed rich still prefer a lower policy than the informed poor, but the misinformed poor will now prefer a higher policy than the informed rich. Thus, there will no longer exist a natural coalition to support strategic under-provision of the public good.

Though our leading example focused on efforts by conservatives to prevent healthcare reform, the logic of the slippery slope is not inherently partisan. The dynamic can arise whenever some voters are suspicious of a beneficial reform, including reforms typically associated with conservative parties. For example, slippery slope arguments are often invoked in debates over school choice, asserting that any increase in the number of charter schools would lead to a two-tiered system of education (Bailey, 2013).

The two key behavioral assumptions under-pinning our model — that there is policy feedback and that agents often undervalue reforms — are supported by considerable empirical evidence. First, there is strong evidence that policy feedback occurs, and that voters learn by acquaintance. In the case of Social Security, Campbell (2011) finds that the introduction of Social Security led to both increased knowledge of the program and increased support for it. Similarly, Cook, Jacobs, and Kim (2010) find that a program which sent information on social security to a random sample of beneficiaries increased the confidence in social security among those who received the information. In a different context, Baccini and Leemann (2012) shows that voters are more likely to be sensitive to climate issues when voting after being exposed to a natural disaster. Social science research suggests a similar effect regarding
attitudes towards gay and lesbian people. Herek and Glunt (1993) and Herek and Capitanio (1996) show that interpersonal contact was the strongest predictor of positive attitudes towards homosexuals. And, of course, public policy affects the opportunities for learning by acquaintance to occur. Day and Schoenrade (1997), Day and Schoenrade (2000), and Griffith and Hebl (2002), amongst others, demonstrate that individuals are more likely to be open about their sexuality (and thereby enable known interpersonal contact between homosexuals and heterosexuals) in environments where anti-discrimination laws and policies are present.

Second, the idea that voters are often mistaken about the value of reforms or public goods is also plainly evident. In a survey of 1021 individuals, Koch and Mettler (2012) found that over 50% of respondents receiving government benefits were unaware that those benefits were indeed provided by the government.4 This perceived absence of government in their lives suggests that agents will be more skeptical of the value of public spending than they would ideally, if they were correctly informed. Conversely, when government spending is seen to be wasteful or directed towards ends that do not directly improve the public welfare, voters tend to inflate the cost of such programs. U.S. spending on foreign aid provides a stark example. In a 2010 World Public Opinion Poll of 848 Americans, the median respondent believed that the foreign aid budget accounted for 25% of the federal spending, whilst only 19% believed it was below 5%. The median respondent believed that foreign aid should ideally comprise 10% of federal spending. In fact, the foreign aid budget in 2010 was less than 1% of total federal spending. By over-attributing the share of public spending on ‘non-beneficial’ projects, voters effectively undervalue public spending as an aggregate bundle.

Moreover, history is replete with examples of policies that voters were originally suspicious or

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4In their study, Koch and Mettler first asked respondents if they had ever used a government social program or not. Only 43% responded affirmatively. Respondents were then read a list of 21 government programs, and then asked if their response would change. After hearing the list, 96% of respondents admitted to having benefited from government programs. The study relied purely upon self reporting. Amongst respondents who originally claimed to have not benefited from government programs, 60% later admitted to having claimed the Home Mortgage Interest Deduction, 47% had claimed the Earned Income Tax Credit, 44% accessed Social Security, 43% benefited from Pell Grants, 40% were on Medicare, 28% were on Medicaid, and 25% received Food Stamps.
skeptical about, but eventually came to appreciate. Social Security, which is now extremely popular amongst voters, was, at its inception, feared by many as a socialist scourge that would enslave Americans.5

This paper contributes to, and extends, several strands of the existing political economy literature. At its core, the inefficiency in this model arises from the endogenous time inconsistency in the decision makers’ preferences, arising out of the changing identity of the pivotal voter. This feature is common to many models of inefficiencies in policy making (especially fiscal policy), including Persson and Svensson (1989), Roberts (1989), Alesina and Tabellini (1990), Tabellini and Alesina (1990), Dewatripont and Roland (1992), Benabou (2000), Battaglini and Coate (2007), and Battaglini and Coate (2008), amongst many others. However, in contrast to many of these models, and similar to Acemoglu and Robinson (2001), Benabou and Ok (2001), the shifting political power is not exogenous, but endogenous to the current pivotal agent’s policy choice.

Policy momentum is another feature of this model that is present in Benabou and Ok (2001). In that paper, policy is sticky. This creates a fear in the current poor that a redistributive policy that will benefit them in the short run, will persist long enough to eventually appropriate their future wealth. However, policy inertia is hard-wired into their model. This paper is more standard in that it allows the polity to change its policy in every period. Reform momentum arises as an equilibrium phenomenon rather than as a feature of the model technology. Although the mechanism that generates the behaviors are distinct, reform momentum in this model generates gradualism in policy making, similar to Dewatripont and Roland (1992). We explore this further in section 5.2.

5A Republican congressman from New York claimed: “The lash of the dictator will be felt, and 25 million free American citizens will for the first time submit themselves to a fingerprint test.” Another opponent worried that it would “establish a bureaucracy in the field of insurance in competition with private business” that would destroy private pensions. Unsurprisingly, slippery slope concerns formed part of the objection to Social Security. During hearings before the Senate Finance Committee, a senator from Oklahoma asked Secretary of Labor, Frances Perkins, “Isn’t this socialism?” When she answered no, he responded: “Isn’t this a teeny-weeny bit of socialism?” Altman (2005)
Finally, this paper extends upon a growing literature concerning learning in a political economy context. Fernandez and Rodrik (1991) consider a model in which asymmetric information about the identity of winners and losers from a reform may cause the reform to fail, even if the reform makes the average agent better off. Similar to this paper, although using a different mechanism, they find an endogenous bias towards status quo policies. A more recent set of papers consider the incentives for agents to choose policies that affect the learning of others. Strulovici (2010) studies learning in bandit problems when decisions (about how to experiment) are made collectively by majority vote. Baker and Mezzetti (2012), Fox and Vanberg (2014), and Parameswaran (2018) consider models of the judiciary in which learning occurs after courts observe the outcomes of agent choices. For example, in Parameswaran (2018) and Fox and Vanberg (2014), agents have an incentive to skew their choices (or to make choices that appear sub-optimal when dynamic considerations are ignored) to prevent learning by the court, and consequently affect the way that legal rules evolve.

The rest of the paper is organized as follows. Section 2 introduces the characteristics of the model. Section 3 establishes basic analytical insights, and Section 4 analyzes the model in a dynamic equilibrium setting. Section 5 presents some extensions, and Section 6 concludes. All proofs appear in the Appendix.

2 Model

We present a dynamic model with two periods, \( t = 1, 2 \). There is a unit mass of agents. Each agent may either be rich or poor. Poor agents have (exogenous) income \( y_L > 0 \) while rich agents have income \( y_H > y_L \). We assume that a majority of agents are poor, so that the median income earner has low income.

In each period, the government can provide a quantity \( g \geq 0 \) of a public good. The unit
cost of the public good is normalized to 1. The public good is financed through a non-
distortionary, proportional tax on income, $\tau$. The government’s budget constraint is $g = \tau \bar{y}$.

An agent with income $y_i$ has preferences over feasible policies $(\tau, g)$ given by:

$$u(\tau, g; y_i) = (1 - \tau)y_i + A \ln g$$

where $A$ parameterizes the marginal benefit of public good spending. The log-linear func-
tional form choice is purely to keep expressions simple; the basic insights will continue to
hold for any concave preference.

Each agent may either be correctly informed ($I$) or misinformed ($M$) about the value of
the public good. Informed agents know the true value of $A$ (which we denote by $A_I$), while
misinformed agents believe that it takes a different value $A_M$. In our main analysis, we
assume that misinformed agents undervalue the public good ($A_M < A_I$), as this will be
shown to be the most interesting case. As an extension, we also consider the opposite case
of misinformed agents who overvalue the good ($A_M > A_I$). To guarantee that the first order
conditions produce interior solutions, we assume that $A_I < y_L$.

So far, we have identified four types of agents; each agent having one of two possible incomes
and one of two possible beliefs. For each type $i \in \{LI, HI, LM, HM\}$, let $\phi_i$ denote the
proportion of type-$i$ agents in the economy. No group constitutes a majority in its own right,
so $\phi_i < \frac{1}{2}$ for all $i$. As above, we assume that a majority of agents are poor (i.e. $\phi_{LI} + \phi_{LM} > \frac{1}{2}$). To ensure that our results are not purely driven by existence of a large number of
misinformed voters, we assume that a majority of agents are informed (i.e. $\phi_{LI} + \phi_{HI} > \frac{1}{2}$).
Finally, for technical convenience, we assume that the informed rich and the misinformed
poor together constitute a majority (i.e. $\phi_{HI} + \phi_{LM} > \frac{1}{2}$). This latter assumption is purely to
simplify the analysis, and our insights will continue to hold even if the condition is violated.

Taken together, these assumptions imply that any two of the three groups — informed poor,
informed rich, and misinformed poor — will together constitute a majority.

We study a simple and stark model of learning. In each period, after a policy is implemented, each agent compares their actual utility against the utility they were expecting, given their belief about \( A \). When these are sufficiently different, the agent realizes that their belief must have been incorrect, and updates their beliefs to the true value. Formally, an agent with belief \( A \) learns whenever:

\[
|u(\tau, g; y_i, A) - u(\tau, g; y_i, A_I)| > \mu
\]

where \( \mu > 0 \) parameterizes the agent’s sensitivity to information. Though stark, this learning technology operationalizes our story in the simplest possible way. Our insights would continue to hold in a more elaborate framework, for example with Bayesian agents, though at the cost of considerable complexity.

Finally, agents may either be sophisticated or naive. A sophisticated agent understands that learning by acquaintance in the first period affects the polity’s second period beliefs (and thus policy preferences). When evaluating policies in the first period, sophisticated agents take this dynamic effect into account. Naive agents, by contrast, ignore this dynamic effect, and so evaluate policies purely based on their stage game payoff. An alternative interpretation of sophisticated and naive types is that all agents understand the learning dynamics, but that sophisticated agents are future oriented (putting weight \( \beta > 0 \) on future utility), whilst naive agents are purely present oriented (i.e. with discount factor 0). Sophistication and naiveté only have their bite in the first period. Since the game ends after the second period, neither type entertains dynamic policy considerations in the second period.

A note about sophistication is in order. Though the model identifies some agents as informed and others as misinformed, all agents will naturally perceive themselves as being correctly informed. Thus, a sophisticated agent with belief \( A \) will also believe that, whenever there is
learning, other agents with the same income will come to share their belief.

There are two political parties that are purely office motivated. In each period, each party announces a feasible fiscal policy \((\tau, g)\) that it is committed to implement if elected. Voters cast their ballots and the party receiving a majority of the vote is elected. A feasible policy \((\tau, g)\) is a majority winner if it is preferred to any other feasible policy \((\tau', g')\) by a majority of agents. We associate equilibrium with the majority winning policy whenever it exists.

3 Preliminaries

In this section, we establish several useful insights that will prove valuable in the subsequent dynamic analysis. In particular, we characterize equilibrium behavior in a static version of the game, and (separately) establish the conditions under which there will be learning.

3.1 Stage Game Benchmark

We begin by studying the equilibrium in a single period game in which there are no dynamic considerations. Since the game is static, the agents evaluate policies by their associated stage game utilities.

Consider an agent with income \(y\) and whose belief about the value of the public good is \(A\). We make the standard assumption that all agents understand the government’s budget constraint; there is no fiscal illusion. Recall that the budget constraint is \(g = \tau y\); the quantity of public goods provided is in direct proportion to the tax rate. A type-\((y, A)\) agent’s indirect utility over tax policies is given by:

\[
v(\tau; y, A) = u(\tau, \tau y; y, A) = (1 - \tau)y + A \ln(\tau y)
\]
It is easily verified that \( v \) is strictly concave — and therefore single peaked — in \( \tau \) for each \((y, A)\). By the first order condition, a type-\((y, A)\)’s most preferred policy is:

\[
\tau^*(y, A) = \frac{A}{y} = \frac{A_I}{y \cdot \tilde{A}_I} = \tau^*(x(y, A), A_I)
\]

where \( x(y, A) = y \cdot \frac{A_I}{\tilde{A}_I} \). The first equality gives a direct expression for \( \tau(y, A) \) as a function of \( y \) and \( A \). All else equal, agents who believe that public goods are more valuable will demand a higher tax rate to fund more public goods; and richer agents will demand a lower tax rate and fewer public goods than poorer agents. For notational convenience, we denote a type \( i \)’s ideal stage game policy by \( \tau_i \), where \( i \in \{LI, HI, LM, HM\} \).

The final equality in (1) reveals that the most preferred tax rate of a type-\((y, A)\) agent coincides with the most preferred tax rate of a type-\((x(y, A), A_I)\) agent; i.e. an informed agent having income \( x(y, A) \). We refer to \( x(y, A) \) as the agent’s ‘effective income’. It is the income for which their most preferred policy would be truly optimal if they had correct beliefs. Naturally, the effective income of an informed agent is simply their income. However, since misinformed agents undervalue the public good \((A_M < A_I)\), their effective income will be larger than their true income (i.e. \( x(y, A_M) > y \)). A misinformed agent who undervalues public goods expresses identical preferences to an agent with higher income who correctly values public goods.\(^6\) Let \( x_i \) denote the effective income of a type-\( i \) agent, where \( i \in \{LI, HI, LM, HM\} \). Now recall that, fixing beliefs, agents’ most preferred tax rates are decreasing in incomes. Hence, if the agents are ordered by their effective incomes, their most preferred policies will be monotone in that ordering. Then, since preferences are single peaked, the median voter theorem applies. The equilibrium tax rate will be the most preferred tax rate of the agent with the median effective income.

Which type has the median effective income? Since \( y_H > y_L \) and \( A_I > A_M \), it follows

\(\text{\textsuperscript{6}}\)Indeed, it is not just that the agents share the same ideal policies. Their preferences coincide. To see this, note that \( v(\tau; y, A) = \frac{A}{A_I} \left[ (1 - \tau) \cdot y \cdot \frac{A_I}{A} + A_I \ln(\tau y) \right] = \frac{A}{A_I} v(\tau; x(y, A), A_I) \).
that the informed poor have the lowest effective income, and the misinformed rich have the highest effective income. The ranking of the remaining types’ effective incomes depends on the size of the belief disagreement relative to the size of income disparities. Suppose that the divergence in beliefs is small relative to the disparity in incomes (formally, if $\frac{A_I}{A_M} < \frac{y_H}{y_L}$).

Then, $x_{LI} < x_{LM} < x_{HI} < x_{HM}$, which implies that $\tau_{HM} < \tau_{H1} < \tau_{LM} < \tau_{LI}$. Because the belief distortions are small, the ideal policies of the informed and misinformed poor will be closer together than the ideal policies of the informed poor and informed rich. Low income earners, as a group, will have a larger demand for public goods than high income earners. If so, since low income earners collectively form a majority, but the informed poor are a minority, it must be that the misinformed poor are pivotal.

By contrast, if beliefs are further apart, so that $\frac{A_I}{A_M} > \frac{y_H}{y_L}$, then $x_{LI} < x_{HI} < x_{LM} < x_{HM}$, which implies that $\tau_{HM} < \tau_{LM} < \tau_{H1} < \tau_{LI}$. The distortion in beliefs is sufficiently large that the ideal policy of the misinformed poor is further from that of the informed poor than is the ideal policy of the informed rich. Informed agents, as a group, have larger demand for public goods than misinformed agents. Then, since informed agents collectively form a majority, but the informed poor are a minority, it must be that the informed rich are pivotal.

In general, the median effective income will be $x_{med} = \min\{x_{LM}, x_{H1}\}$. The equilibrium tax rate will be $\tau_{med} = \frac{A_I}{x_{med}} = \max\{\tau_{LM}, \tau_{H1}\}$, and the equilibrium level of public goods will be $g_{med} = \tau_{med} \bar{y}$.

### 3.2 Learning

There will be learning if, given policy $(\tau, g)$ that is implemented, an agent’s anticipated utility (given their belief of $A$) differs sufficiently from their realized utility (given the true
This will be true if:

\[
|[(1 - \tau)y + A_I \ln g] - [(1 - \tau)y + A_M \ln g]| > \mu
\]

\[
g > \exp \left\{ \frac{\mu}{|A_I - A_M|} \right\} = g^\dagger
\]

i.e. if the amount of public goods provided is sufficiently high. This captures the ideas previously discussed, that agents typically learn from policy only if the policy is sufficiently salient. \(g^\dagger\) denotes either the highest policy that does not result in learning, or the lowest policy that induces learning.\(^7\) Similarly define \(\tau^\dagger\) = \(\frac{g^\dagger}{y}\), which is the implied threshold tax rate. Notice that \(g^\dagger\) and \(\tau^\dagger\) are increasing in \(\mu\) and decreasing in \(|A_I - A_M|\). Intuitively, the less sensitive are agents to information (i.e. the higher is \(\mu\)), the more salient the policy must be to engender learning. By contrast, the larger is the disparity in beliefs, the less salient the policy needs to be to convince the agent. Since there is a one-to-one relationship between \(\mu\) and \(\tau^\dagger\) (holding \(|A_I - A_M|\) fixed), it suffices to present results in terms of \(\tau^\dagger\) rather than \(\mu\). For simplicity, we will assume that \(\tau^\dagger < \tau_{L,I}\), which rules out the possibility of no learning even when the highest stage-game consistent policy is chosen.

Note importantly that an agent’s propensity to learn is independent of their income. Thus, in any given period, there will either be learning by misinformed agents of both income types, or neither income type. Moreover, given our two type assumption regarding informedness, after learning occurs, all agents will be correctly informed. (In section 5.2, we consider the implications of having misinformed agents with a range of incorrect beliefs.)

### 3.3 Dynamics with Naive Agents

We end this section by briefly noting the benchmark dynamics that would arise in a world with only naive agents. Since naive agents ignore the effect of learning on future outcomes,\(^7\)

\(^7\)For technical reasons related to maximizing on an open set, we need to allow either possibility at the threshold. We could avoid the ambiguity by discretizing the policy space.
they will simply express stage game preferences in each period. If so, the stage game equilibrium outcome will prevail, period by period. The first period policy will reflect the (original) median effective income earner’s ideal policy, whom we showed would belong to either the informed rich or the the misinformed poor — whichever group had the lower effective income (i.e. $\tau_{med} = \max\{\tau_{LM}, \tau_{HI}\}$.) If $\tau_{med} < \tau^\dagger$ (equivalently, if $g_{med} < g^\dagger$), then there will be no learning; the second period environment will be identical to the first, and so the static outcome will repeat.

By contrast, if $\tau_{med} > \tau^\dagger$ (equivalently, if $g_{med} > g^\dagger$), then all agents become informed, and then since the poor comprise a majority, the informed poor will be pivotal in the second period. Learning will cause political power to shift between the groups. Moreover, since the informed poor had the lowest effective income, and thus the highest ideal policy, taxes and public goods provision will be higher in the second period than the first. This change reflects the change in beliefs (and thus policy preferences) that resulted from first period learning. This is is the slippery slope at work. A smaller equilibrium policy today begets a larger equilibrium policy tomorrow. There is endogenous policy momentum.

The point of this section was to demonstrate how learning could generate a slippery slope. Because we assumed that agents were naive, they did not attempt to manipulate policy in order to prevent or ensure a slide down the slippery slope. We take up that concern in the next section.

4 Dynamics

In the previous section, we characterized the stage game preferences of agents, given their income and beliefs, and showed that these were single-peaked in the policy variable $\tau$. Since in our simple two period model, the second period is effectively a stage game, this characterization also reflects the preferences of agents in the second period. Additionally, since naive
agents are purely present-oriented, these also reflect the preferences of naive agents in the first period.

The first period preferences of sophisticated agents, however, may differ insofar as those agents understand that learning in the first period may affect second period outcomes. Absent learning, sophisticated agents understand that the equilibrium second period policy will reflect the ideal policy of the (original) median effective income earner, as characterized in the previous section, so that $\tau_2 = \tau_{med}$. By contrast, if there is learning, sophisticated agents understand that all agents will have the same second period beliefs and that the poor will be pivotal. Moreover, since all agents believe that they have correct beliefs, a sophisticated agent with belief $A$ will believe that all other agents will arrive at the same belief.

Thus, a sophisticated agent’s assessment of their lifetime utility from a first period policy $\tau$ will be:

$$v_1(\tau; y, A) = \begin{cases} (1 - \tau)y + A \ln(\tau y) + \beta [(1 - \tau_{med})y + A \ln(\tau_{med}y)] & \text{if } \tau < \tau^\dagger \\ (1 - \tau)y + A \ln(\tau y) + \beta [(1 - \tau(y_L, A))y + A \ln(\tau(y_L, A)y)] & \text{if } \tau > \tau^\dagger \end{cases}$$

The first part of the agent’s lifetime utility (compromising the first two terms) corresponds to first period utility. It is continuous and concave (and thus single-peaked) in the first period policy $\tau$, and achieves a maximum at the stage game optimum $\tau(y, A)$. The second part corresponds to the second period utility, and is affected by the first period policy $\tau$ only insofar as $\tau$ determines whether there is learning or not (i.e. whether $\tau$ is above or below $\tau^\dagger$). Thus, the second part is piece-wise constant in $\tau$. If learning benefits the agent, then there will be a discontinuous jump up in the agent’s utility at $\tau = \tau^\dagger$. By contrast, if learning harms the agent, then there will be a discontinuous jump down. The size of this utility jump is given by $\Delta(y, A) = A[\ln(\tau(y_L, A)) - \ln(\tau_{med})] - (\tau(y_L, A) - \tau_{med})y$, which depends on both the agent’s income and their beliefs, but not on the specific period 1 policy chosen.
Figure 1: Lifetime utility for a sophisticated informed rich agent as a function of the first period policy $\tau$. Each panel depicts utility for a different value of $\tau^\dagger$ — the threshold policy above learning occurs; utility drops discontinuously at this threshold. Preferences remain single peaked if $\tau^\dagger > \tau_{HI}$.

Figure 1 illustrates the lifetime utility of a sophisticated informed rich agent, as a function of the first period policy $\tau$. Learning harms the informed rich, because it results in a second period policy that is further from their ideal. Thus, learning causes the agent’s utility to decrease by $\beta \Delta$. The rightmost panel illustrates a situation where $\tau^\dagger > \tau_{HI}$; learning requires a first period policy above the agent’s ideal stage game policy $\tau_{HI}$. In this instance, the downshift in utility occurs in a region of the policy space where utility is already decreasing; single-peakedness is preserved. By contrast, in the other two panels, $\tau^\dagger < \tau_{HI}$, and so learning causes utility to decrease in a region where utility is otherwise increasing, causing single-peakedness to be violated. Notice that, in the left-most panel, where a large distortion is required to prevent learning, the agent’s most preferred policy remains unchanged; it is the stage game ideal. By contrast, her most preferred policy in the middle panel is $\tau^\dagger$. In this instance, the benefit of preventing learning exceeds the cost of distorting the policy away from the stage game optimum.

If learning was instead beneficial (e.g. for the sophisticated informed poor), then utility would discontinuously jump up at $\tau^\dagger$. This will cause single-peakedness to be violated whenever $\tau^\dagger$ is to the right of the agent’s stage game ideal (because utility jumps up in a region where it is otherwise falling). Moreover, if the distortion needed to entice learning is small, then the agent’s most preferred policy will be $\tau^\dagger$, rather than her stage game ideal.
With these insights in mind, we are ready to begin characterizing the dynamic equilibrium of the game. Since the benefit of learning $\Delta(A, y)$ depends on which agent is pivotal absent learning (i.e. the informed rich or the misinformed poor), our analysis will be in two parts.

4.1 Divergence in Beliefs is Relatively Small

Suppose the divergence in beliefs between the informed and misinformed is relatively small (formally, that $\frac{A_M}{A_I} < \frac{y_H}{y_L}$). We previously showed that, in this scenario, $\tau_{HI} < \tau_{LM} < \tau_{LI}$, so that income disparities create a larger wedge in ideal policies than belief differences do.

By our assumptions, if there is no learning, all agents will expect the second period policy to be $\tau_{LM}$. Moreover, even if there is learning, the sophisticated misinformed agents would expect the same second period policy, because they would anticipate all other agents learning that $A = A_M$. Learning is inconsequential to sophisticated misinformed agents. All misinformed agents will express stage game preferences in the first period, whether they are sophisticated or not. In particular, the most preferred first period policy of the misinformed poor will be their stage game ideal, $\tau_{LM}$.

By contrast, sophisticated informed agents will potentially face dynamic incentives. They each understand that if there is learning, the second period policy will shift from $\tau_{LM}$ to $\tau_{LI}$ — which the informed rich perceive as worse, and the informed poor perceive as better. Hence, the informed rich may wish to strategically prevent learning that would otherwise happen under the naive benchmark (i.e. if $\tau^\dagger < \tau_{LM}$), and the informed poor may wish to strategically induce learning when it would otherwise not (i.e. if $\tau^\dagger > \tau_{LM}$). However, neither group can build a majority coalition around such a strategic choice. For example, none of the poor agents (whether informed or not, or sophisticated or not) would join the informed rich in supporting a policy below $\tau_{LM}$. Similarly, none of the other groups would join the informed poor in supporting a policy above $\tau_{LM}$. This implies the following result:
Proposition 1. Suppose the divergence in beliefs is small (i.e. $\frac{A_I}{A_M} < \frac{y_H}{y_L}$). The equilibrium first period policy is $\tau_1 = \tau_{LM}$ (regardless of the value of $\tau^1$).

When the divergence in beliefs is small, behavior in the dynamic game will coincide with the benchmark dynamic equilibrium with naive players. The equilibrium in each period will simply be the most preferred policy of the median effective income earner in that period. In particular, in the first period, the misinformed poor will implement their ideal stage game policy $\tau_{LM}$. This will be true even if some measure of agents are sophisticated and have long run concerns.

What are the implications for learning? If $\tau_{LM} < \tau^1$, then there will not be any learning, and the first period outcome will repeat in the second period. If $\tau_{LM} > \tau^1$, then there will be learning, and the informed poor will become pivotal in the second period. The second period policy will be $\tau_{LI} > \tau_{LM}$. There will be endogenous policy momentum.

When the divergence in beliefs is small, there may be policy momentum insofar as learning causes political power to shift from the misinformed poor to the informed poor, thereby inducing a higher policy in the second period. However, the awareness of this eventuality by sophisticated agents cannot sustain policy manipulation to prevent policy from going down the slippery slope.

4.2 Divergence in Beliefs is Relatively Large

Next, suppose that the divergence in beliefs between the informed and misinformed is relatively large (formally, that $\frac{A_I}{A_M} > \frac{y_H}{y_L}$). Then, $\tau_{LM} < \tau_{HI} < \tau_{LI}$; differences in beliefs create a larger wedge in ideal policies than income disparities do. If there is no learning, then the informed rich will be pivotal in the second period. By contrast, if there is learning, a poor agent will become pivotal. Unlike the previous case, in this setting, learning will be
salient to all sophisticated agents, since it will be understood to shift political power from rich agents to poor agents. As before, learning hurts the informed rich since they perceive it as shifting political power away from them to the informed poor. For the same reason, the informed poor perceive learning as being favorable to them. Additionally, all misinformed agents perceive learning as favorable, since it shifts political power from the informed rich to the misinformed poor, whose ideal policy is closer to their own.

It turns out the dynamic incentives created by learning affect the strategies of the informed sophisticated agents quite differently from the misinformed sophisticated agents. Accordingly, we conduct the analysis in three parts. First, we suppose that all informed agents are sophisticated and all misinformed agents are naive. Next, we take the opposite case: all informed agents are naive and all misinformed agents are sophisticated. Although stark, these two focal scenarios will help shed light on the strategic incentives at play. Finally, we consider the case where all agents are sophisticated.

4.2.1 Only Informed Agents are Sophisticated

Take the first case: suppose that all informed agents are sophisticated and that all misinformed agents are naive. It turns out that, in this case, the strategic incentives are similar to those in section 4.1. The misinformed will express their stage game preferences. The informed rich may seek to strategically prevent learning that would otherwise happen (i.e. if $\tau^* < \tau_{HI}$), and the informed poor may seek to strategically induce learning that would otherwise not (i.e. if $\tau^* > \tau_{HI}$).

Similar to the previous section, the informed poor will not be able to build a majority coalition that successfully distorts policy; no other group desires policies above $\tau_{HI}$. However, now, the informed rich may be able to successfully distort policy in a way that prevents learning. The reason is that, since $\tau_{LM} < \tau_{HI}$, the misinformed poor (who in conjunction with the informed rich constitute a majority) will support moves to push policy below $\tau_{HI}$. 
The willingness of the informed rich to actually distort policy depends on a comparison of the first period loss from the distortion, against the second period gain from preventing learning. Naturally, the larger the required distortion, the less valuable it is to strategically prevent learning. Let \( \tau_{HI} < \tau_H \) be the lowest first period policy (i.e. the most distorted policy) that prevents learning, that is acceptable to the sophisticated informed rich. (Formally, \( \tau_{HI} \) is characterized by equation (2) in the Proof of Proposition 2.A, in the Appendix.)

Before stating the main result, we note a possible complication. The assumptions of the model do not guarantee that \( \tau_{HI} \geq \tau_{LM} \). If this condition is not satisfied (i.e. if the informed rich are willing to distort policy below the ideal policy of the misinformed poor) and if \( \tau^\dagger \in (\tau_{LM}, \tau_{HI}) \), then the ordering of agents by their most preferred policy will differ between the static and dynamic games — and this will affect the identity of the pivotal voter.

We begin by studying the case where this complication does not arise, and then address the effect of the complication, below.

**Proposition 2.A.** Suppose the divergence in beliefs is large (i.e. \( \frac{A_I}{A_M} > \frac{w_H}{w_L} \)), and that only informed agents are sophisticated. If \( \tau_{HI} \geq \tau_{LM} \), then the equilibrium first period policy is given by:

\[
\tau^*_1(\tau^\dagger) = \begin{cases} 
\tau_{HI} & \text{if } \tau^\dagger \leq \tau_{HI} \\
\tau^\dagger & \text{if } \tau_{HI} < \tau^\dagger < \tau_{HI} \\
\tau_{HI} & \text{if } \tau^\dagger \geq \tau_{HI}
\end{cases}
\]

The content of Proposition 2.A is summarized in the top panel of Figure 2. Implicitly, we assume that there is no learning when \( \tau = \tau^\dagger \). If \( \tau^\dagger \geq \tau_{HI} \), then there is no need for the informed rich to distort policy — implementing their stage game ideal policy is consistent with no learning, thus enabling them to retain power in the second period without any first period sacrifice. When \( \tau^\dagger < \tau_{HI} \), then the cost of distorting policy to prevent learning is so high that the informed rich ‘throw in the towel’, by implementing their ideal policy today, accepting that by doing so, they will cede second period political power to the informed
poor. Strategic manipulation occurs when $\tau^\dagger \in (\underline{\tau}_{HI}, \tau_{HI})$. In this case, the informed rich strategically under-provide the public good in order to prevent learning, enabling them to retain political power.

These insights can be restated in terms of the effectiveness of the policy feedback channel. When the feedback channel is weak (i.e. $\mu$ is high), then $\tau^\dagger$ will be large, and the likelihood of a slippery slope dynamic arising will be small. By contrast, when policy feedback is strong (i.e $\mu$ is small), then $\tau^\dagger$ will be small, and a slippery slope dynamic will be at play. When policy feedback is extremely strong, the distortion needed to prevent learning will be so high that the informed rich simply throw in the towel. By contrast, when there is moderate feedback, the informed poor may do better to strategically manipulate policy to mitigate the feedback.

A comparison of Propositions 1 and 2.A — strategic behavior arises in the latter, but not the former — is instructive. Strategic manipulation will only succeed if there is a coalition that will support it. When the ideal policy of the misinformed poor lies below that of the informed rich, a natural coalition exists that supports downwardly distorting policy. By contrast, when the ideal policy of the misinformed poor lies above that of the informed poor, then no such common incentive exists. Now, the ideal policy of the misinformed poor will be

Figure 2: Equilibrium when the divergence in beliefs is large and the informed (only) are sophisticated. The top panel depicts the case when $\tau_{LM} \leq \underline{\tau}_{HI}$. The bottom panel depicts the opposite case.
(relatively) low when the misinformed have very strongly pessimistic beliefs. Thus, strategic manipulation is most likely when misinformation highly skews beliefs in the polity.

Let us now return to the complication that arises when $\tau_{HI} < \tau^\dagger < \tau_{LM}$. In this scenario, the informed rich have an ideal policy ($\tau^\dagger$) below that of the misinformed poor ($\tau_{LM}$), and this policy prevents learning; however, limiting attention to policies that induce learning, the informed rich have an ideal policy ($\tau_{HI}$) above that of the misinformed poor. This preference order reversal causes policy to become unstable; there will be no majority winning policy. Instead, a Condorcet cycle will exist.

Let $\tau_{LM} < \tau_{HI}$ denote the policy below $\tau_{HI}$ that gives the misinformed poor the same (lifetime) utility as $\tau_{HI}$. We formally characterize $\tau_{HI}$ in equation (3) in the Proof of Proposition 2.B, in the Appendix. In fact, since the misinformed poor are naive agents, $\tau_{LM}$ will be below $\tau_{LM}$.

**Proposition 2.B.** Suppose the divergence in beliefs is large (i.e. $\frac{A_{HI}}{A_{LM}} > \frac{u_{HI}}{u_{LM}}$), and that only informed agents are sophisticated. If $\tau_{HI} < \tau_{LM}$, then the equilibrium first period policy is given by:

$$
\tau^*_1(\tau^\dagger) =
\begin{cases}
\tau_{HI} & \text{if } \tau^\dagger \leq \max\{\tau_{LM}, \tau_{HI}\} \\
\text{No Majority Winner} & \text{if } \max\{\tau_{LM}, \tau_{HI}\} < \tau^\dagger < \tau_{LM} \\
\tau^\dagger & \text{if } \tau_{LM} < \tau^\dagger < \tau_{HI} \\
\tau_{HI} & \text{if } \tau^\dagger \geq \tau_{HI}
\end{cases}
$$

Proposition 2.B is summarized in the bottom panel of Figure 2, and is broadly similar to Proposition 2.A, except in that there is policy inconsistency over a region of the parameter space. To see why, note that, in this region, $\tau^\dagger$ cannot be a majority winner; the informed

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8The notation intentionally highlights the analogy between $\tau_{HI}$ and $\tau_{LM}$. For $i \in \{HI, LM\}$, $\tau_i$ denotes the policy below $\tau_{HI}$ that, absent learning, gives a type $i$ agent the same lifetime utility as $\tau_{HI}$ does with learning.
and misinformed poor (who together constitute a majority) would replace it with $\tau_{LM}$ (which implies learning). But $\tau_{LM}$ cannot be a majority winner, since the informed rich and informed poor (who together constitute a majority) would replace it with $\tau_{HI}$. But a coalition of the informed rich and the misinformed poor would, in turn, replace this with $\tau^\dagger$ (thus preventing learning), provided that $\tau^\dagger$ is not too far below $\tau_{LM}$. There is a Condorcet cycle.

We end this subsection by noting that, though we assumed that the informed poor were sophisticated, this assumption was not important to the result, and Propositions 2.A and 2.B would continue to hold if some or all of the informed poor were naive. Similarly, it wasn’t essential that all the informed rich are sophisticated. All that is required is that the measure of sophisticated rich is large enough that they, along with the misinformed (rich and poor) jointly constitute a majority.

### 4.2.2 Misinformed Agents are Sophisticated

Now, let us consider the opposite case, where all misinformed agents are sophisticated and all informed agents are naive. The strategic incentives for the misinformed agents are quite different to the informed rich. Both the misinformed poor and the misinformed rich will be willing to distort policy upwards to generate learning, since in doing so, they anticipate political power shifting from the informed rich (whom they consider to be optimistically misinformed) and towards the misinformed poor (whom they consider to be correctly informed).

Recall that, absent any strategic voting by misinformed agents, the equilibrium policy will be $\tau_{HI}$. If $\tau^\dagger \leq \tau_{HI}$, the static equilibrium policy will automatically generate learning, and so there is no particular additional incentive for the misinformed to strategically distort policy. However, if $\tau^\dagger > \tau_{HI}$, then the misinformed may wish to upwardly distort policy, in order to induce learning which would not otherwise happen. Naturally, their willingness to do so depends on a trade-off of the period 1 cost of distorting against the period 2 gain from having political power shift in their favor.
Let $\tau_{LM}$ denote the highest policy (i.e. the most distorted policy) acceptable to the misinformed poor that induces learning, assuming the naive benchmark policy $\tau_{HI}$ does not. We formally characterize $\tau_{LM}$ in equation (4) in the Proof of Proposition 3, in the Appendix.

**Proposition 3.** Suppose the divergence in beliefs is large (i.e. $\frac{A_L}{A_M} > \frac{w_U}{w_L}$), and that only misinformed agents are sophisticated. Then there exists $\tilde{\tau}$, with $\tau_{HI} \leq \tilde{\tau} < \tau_{LM}$ such that the equilibrium first period policy is given by:

$$
\tau_1^*(\tau^\dagger) = \begin{cases} 
\tau_{HI} & \text{if } \tau^\dagger \leq \tau_{HI} \\
\tau^\dagger & \text{if } \tau_{HI} < \tau^\dagger < \tilde{\tau} \\
\text{No Majority Winner} & \text{if } \tilde{\tau} < \tau^\dagger < \tau_{LM} \\
\tau_{HI} & \text{if } \tau^\dagger \geq \tau_{LM}
\end{cases}
$$

Proposition 3 is summarized in Figure 3, below. If $\tau^\dagger \leq \tau_{HI}$, then the misinformed poor have no dynamic incentive to skew policy — the stage game equilibrium policy $\tau_{HI}$ will induce learning. If $\tau^\dagger > \tau_{LM}$, then the cost of distorting policy to induce learning is so high that the misinformed poor are deterred; they allow the informed rich to retain political power.

The possibility of strategic manipulation arises when $\tau^\dagger \in (\tau_{HI}, \tau_{LM})$. However, in this scenario, a complication, similar to the one addressed in Proposition 2.B arises; the ordering of types by their ideal policies assuming that learning occurs differs from the ordering when learning does not. And this introduces the possibility of a Condorcet cycle. Indeed, there will be policy incoherence whenever, relative to a policy $\tau^\dagger$ that induces learning, the informed rich and misinformed poor find it beneficial to implement a policy $\tau' < \tau_{HI}$ that does not induce learning, but is closer to each of their stage game ideal policies. Intuitively, such a policy will exist whenever a sufficiently large distortion is needed to induce learning (i.e. whenever $\tau^\dagger > \tilde{\tau}$).

Strategic manipulation when the misinformed are sophisticated produces the opposite dy-
Figure 3: Equilibrium when the divergence in beliefs is large and the misinformed (only) are sophisticated.

Dynamic to the typical slippery slope behavior. Rather than downwardly distort policy to prevent other agents from learning that a policy is more desirable, here, the agents upwardly distort policy to ensure that other agents learn that the policy is less desirable. This strategic behavior has a ‘learning from mistakes’ flavor to it — with the understanding that the mistake must be large enough to ensure that the learning actually happens.

We end this subsection by noting that, though we assumed that the misinformed rich were sophisticated, this assumption was not important to the result, and Proposition 3 would continue to hold if some or all of the misinformed poor were naive. Similarly, it wasn’t essential that all the misinformed poor are sophisticated. All that is required is that the measure of sophisticated misinformed poor is large enough that they, along with the informed poor jointly constitute a majority.

Finally, recall that to simplify the analysis, we assumed that the misinformed rich were never pivotal coalition partners. This made it unnecessary to consider policy deviations by a coalition of the informed poor and misinformed rich, say. Proposition 3 will continue to hold even if we relaxed this assumption, though the analysis would become more complicated.

### 4.2.3 All Agents are Sophisticated

We finally consider the case where all agents are sophisticated. Two points are worth noting. First, whenever $\tau^\dagger \in (\tau_{LM}, \tau_{HI})$, it may be the the informed rich will seek to prevent learning
by locating policy just below $\tau^\dagger$, while the misinformed rich seek to induce learning by locating policy just above $\tau^\dagger$. Obviously, it cannot be that both groups succeed at strategically manipulating policy. Indeed, the informed rich will never prevail, since the informed and misinformed poor agents (who together constitute a majority) will always prefer a policy slightly above $\tau^\dagger$ that induces learning, to one slightly below it that does not. Thus, when all agents are sophisticated, equilibria will have a similar flavor to Proposition 3.

Second, when all agents are sophisticated, then the reversals in preference orderings that caused policy incoherence (i.e. the existence of Condorcet cycles) become more likely.

As before, let $\tau_i$ denote the policy below $\tau_{HI}$ that, absent learning, gives a type $i$ agent the same utility as $\tau_{HI}$ would with learning. These expressions are formally defined by equations (2) and (3) in the Appendix. Similar to Section 4.2.1, the equilibrium characterization will depend on the relative locations of $\tau_{HI}$ and $\tau_{LM}$.

**Proposition 4.** Suppose the divergence in beliefs is large (i.e. $\frac{A_I}{A_M} > \frac{y_H}{y_L}$), and that all agents are sophisticated.

1. If $\tau_{HI} \geq \tau_{LM}$, then the equilibrium mirrors Proposition 3. There exists $\bar{\tau}$, with $\tau_{HI} \leq \bar{\tau} < \tau_{LM}$ such that the equilibrium first period policy is given by:

$$
\tau_1^*(\tau^\dagger) = \begin{cases} 
\tau_{HI} & \text{if } \tau^\dagger \leq \tau_{HI} \\
\tau^\dagger & \text{if } \tau_{HI} < \tau^\dagger < \bar{\tau} \\
\text{No Majority Winner} & \text{if } \bar{\tau} < \tau^\dagger < \tau_{LM} \\
\tau_{HI} & \text{if } \tau^\dagger \geq \tau_{LM}
\end{cases}
$$
2. If $\tau_{HI} < \tau_{LM}$, then the equilibrium first period policy is given by:

$$
\tau^*_1(\tau^\dagger) = \begin{cases} 
\tau_{HI} & \text{if } \tau^\dagger \leq \tau_{HI} \\
\text{No Majority Winner} & \text{if } \tau_{HI} < \tau^\dagger < \tau_{LM} \\
\tau_{HI} & \text{if } \tau^\dagger \geq \tau_{LM}
\end{cases}
$$

Proposition 4 incorporates intuitions from Propositions 2.A, 2.B and 3 in the previous subsections. Suppose that $\tau_{HI} \geq \tau_{LM}$, so that, to prevent learning, the informed rich would not be willing to distort policy below the level that the misinformed poor require. Then, although there may strategic incentives to distort policy below $\tau_{HI}$, these do not generate a reversal in the ordering of ideal policies. If so, despite the informed rich being sophisticated, the strategic environment is similar to the one present in section 4.2.2 — and so the equilibrium characterization resembles Proposition 3.

By contrast, when $\tau_{HI} < \tau_{LM}$, this preference reversal is guaranteed to arise, resulting in policy incoherence, similar to that arising in Proposition 2.B. The stage game equilibrium policy $\tau_{HI}$ will only be implemented when $\tau^\dagger$ is so extreme as to make strategic manipulation undesirable to all agents. Otherwise, at least one group will seek to strategically manipulate policy, and this will result in policy incoherence.

An important insight arising from Proposition 4 is that, relative to the previous cases, as more agents are made sophisticated, the possibility of coherent policy making breaks down, as strategic incentives cause disparate coalitions to pull policy in different directions. Furthermore, as we argued in previous sections, our results are robust to allowing some agents from each group to be naive. The insights in Proposition 4 did not rely on all agents being sophisticated per se — just that enough of them were.
4.3 Discussion

Given the preceding analysis, several insights become apparent. First, the slippery slope dynamic arises due to a specific interaction between the nature of misinformation and learning. It requires that: (i) misinformation causes the median agent to demand less of the public good than they would if perfectly informed; and that (ii) there is learning by acquaintance, so that beliefs evolve with the provision of the public good. The aggregated social preferences are time inconsistent, and reflect a shifting of political power between different groups of agents as learning occurs. These two features, together, imply that, over time, the median agent’s demand for the public good increases, creating an endogenous policy momentum whereby moderate policies today beget more extreme ones tomorrow.

We emphasize that the slippery slope dynamic is a political economy phenomenon — it is not enough that some voters are misinformed; what matters is how misinformation affects the aggregated social preference over outcomes. This insight will become particularly apparent in Section 5.1, where misinformation causes agents to overvalue (rather than undervalue) the public good. There, we show that that, although the demand by individual agents may rise, misinformation will not distort the preferences of the median agent. Hence, despite some agents being misinformed, and despite the possibility of learning by those agents, there will be no natural force creating policy momentum.

Second, the possibility of a slippery slope dynamic arising may create incentives for particular groups of (sophisticated) voters to strategically manipulate policy — either to prevent or hasten the shift in political power between voters. However, we showed that in a political economy setting, their ability to successfully do so is constrained by several factors, including the ordering of agents’ stage-game ideal policies. Indeed, we showed that, for there to be scope for strategic manipulation, the divergence in beliefs between the informed and misinformed needed to be relatively large. This ensured that the wedge in ideal policies arising from misinformation (between agents having the same income) was larger than the
wedge arising from income differences (between agents having the same beliefs) — i.e. $\tau_{LM} < \tau_{HI} < \tau_{LI}$. This arrangement of ideal policies created the possibility that the group seeking to strategically manipulate policy could make common cause with other groups to build a majority coalition around the distorted policy. If this condition were not met, then the groups would seek to pull policy in opposite directions, preventing the emergence of a coherent majority coalition that could shift policy from the stage-game baseline.

Third, we highlighted the crucial role that sophistication played in generating and sustaining policy distortion. We demonstrated that the canonical case, of policy under-provision to prevent a slide down the slippery slope, could only arise when informed agents were relatively more likely to be sophisticated than their misinformed counterparts. This made possible a stable majority coalition between the informed rich and the misinformed poor to keep policy low. By contrast, when the misinformed agents were relatively more likely to be sophisticated, the opposite effect arose: the misinformed to upwardly distort policy to induce learning. Interestingly, the learning motive here had a ‘learning from mistakes’ flavor to it — the misinformed upwardly distorted policy by sufficiently much to teach their counterparts a lesson, by making it inescapably clear that the public good was not nearly so valuable.

Finally, we showed that sophistication amongst agents created the possibility of preference reversals, where the ordering of groups’ ideal policies were different in the region of policy-space where learning occurred, from the region where it did not. We showed that these preference reversals were associated with the existence of Condorcet cycles and incoherent policy making. Moreover, we showed that policy inconsistency became more likely as the number of sophisticated agents in the polity grew. This suggests that the role for actual strategic manipulation of policy motivated by a slippery slope dynamic is potentially quite limited. Though slippery slope arguments are common place as rhetorical devices, their translation to actual policy is necessarily more complicated.
5 Extensions

5.1 Agents Overvalue the Public Good

Crucial to our analysis in the previous sections was the assumption that misinformed agents undervalue the public good. What if they instead overvalued it, so that $A_M > A_I$? It turns out that, with this change, there will neither be policy momentum nor policy distortion along the equilibrium path. And this will be true regardless of any assumptions we make about who is sophisticated and who is not.

To see why, notice that (depending on whether the divergence in beliefs is high, or not, relative to the difference in incomes) there are two possible arrangements of effective incomes: (i) $x_{HI} < x_{LI} < x_{HM} < x_{LM}$, or (ii) $x_{HI} < x_{HM} < x_{LI} < x_{LM}$. Then, since the informed are a majority, and the poor are a majority, in both cases the median effective income earner must be an informed poor agent.

Two insights are worth noting. First, if all agents are naive, then the first period policy will be $\tau_{LI}$ — the static ideal policy of the informed poor. Moreover, this policy will repeat in the second period, regardless of whether the policy begets learning or not. (The informed poor will be pivotal either way.) Though learning affects beliefs of various agents in the polity, it does not affect the beliefs (or identity) of the median voter. Hence, there is no natural tendency for policy momentum.

Second, sophistication will not change this basic dynamic. If the informed agents are sophisticated, they understand that learning has no dynamic effect on policy, so despite their sophistication, they express the same preferences as if they were naive. By contrast, the misinformed agents, when sophisticated, may see an incentive to upwardly distort policy to beget learning and shift political power from the informed poor (whom they perceive to be misinformed). But such policies will never be majority winners, since the informed
agents (who together constitute a majority) will always prefer a policy closer to $\tau_{LI}$. Thus, the informed poor’s ideal policy will be the majority winner, no matter whether agents are sophisticated or naive (or any mixture of the two).

What is going on? The underlying tension between the policy preferences of the rich and poor is unchanged — the rich want few public goods than the poor. However, when the misinformed overvalue the public good, they demand more of it — effectively behaving as if they were poorer than they are. The misinformed poor and the informed rich are no longer natural allies — in fact, they seek to pull policy in opposite directions. This secures (rather than undermines) the political power of the informed poor.

5.2 Continuum of Beliefs and Gradualism

Amongst the starker features of our baseline model was the assumption that there were only two possible beliefs: the correct belief $A_I$ or the incorrect belief $A_M < A_I$. This assumption generated the all-or-nothing feature of learning — either all misinformed agents updated their beliefs, or none did. It also meant that agents would either distort policy just sufficiently to either prevent or induce learning, or they would not distort at all. In this section, we do two things: First, we demonstrate how our model can be extended to allow for agents to have a range of beliefs. Second, we demonstrate that in the extended model, learning will be more gradual, and that this may create incentives for distortion at intermediate levels — where, for example, agents do not prevent learning entirely, but slow the rate of learning, and thus the rate at which political power shifts.

Here is the model. There is a unit mass of agents playing an infinite horizon dynamic game, with time indexed by $t = 0, 1, 2, ..., \phi_i$ denotes the fraction of agents with income $y_i$ (with $i \in \{H, L\}$), and suppose that $\phi_L > \frac{1}{2}$ so that a majority are poor. A fraction $\gamma_i > \frac{1}{2}$ of type $i \in \{H, L\}$ agents is initially correctly informed, whilst the remainder are misinformed.
As before, we assume that $\phi_L \gamma_L < \frac{1}{2}$ so that the informed poor do not, by themselves, constitute a majority. Each misinformed agent has a belief independently drawn from a continuous distribution $F_i(A)$, with support $[A_0, A_I]$. (For simplicity, we assume that the supports of the distribution are the same for rich and poor agents, but the distributions themselves may differ.)

The agents’ preferences, the learning technology, and the government’s budget constraint are unchanged from the baseline model. We focus on the case where strategic voting to prevent a slippery slope dynamic is most likely: i.e. when the informed are sophisticated and the misinformed are naive. In what follows, we provide a succinct analysis of this extension and highlight key results. A detailed analysis can be found in the Appendix.

Given a policy $\tau$, the set of agents who update their beliefs are those whose beliefs are sufficiently far from the truth. As before, the propensity to learn is independent of income. Formally, any agent with belief $A < A(\tau)$ will learn, where:

$$A(\tau) = A_I - \frac{\mu}{\ln(\tau y)}$$

Thus, learning truncates the distribution of beliefs from below. Notice that $A(\tau)$ is increasing in $\tau$ — a larger policy begets more learning and truncates the distribution at a higher point. Let $A_t$ denote the lowest belief that an agent may have at the start of time $t$, given the sequence of policies (i.e. opportunities of learning) up to that time. We have $A_{t+1} = \max\{A_t, A(\tau_t)\}$ for all $t = 0, 1, 2, \ldots$. At time $t$, all originally misinformed agents with beliefs $A \in [A_0, A_t]$ will have become correctly informed, while agents with belief $A \in (A_t, A_I]$ remain misinformed. Given this learning process, the mass of informed agents with income $y_i$ at time $t$ is $\phi_i[\gamma_i + (1 - \gamma_i)F_i(A_t)]$. Let $G(x \mid A_t) = \Pr[x(y,A) \leq x \mid A_t]$ denote the (induced) distribution of effective incomes, given $A_t$. (We provide an explicit characterization of $G(x \mid A_t)$ in the Appendix.)
Let $X(A_t)$ denote the median effective income at time $t$, which is the solution to $G(X(A_t) | A_t) = \frac{1}{2}$. Define $\underline{A} = \inf\{A | X(A) < y_H\}$ and $\overline{A} = \sup\{A | X(A) > y_L\}$. When $A_t < \underline{A}$, the informed rich have the median effective income; when $\underline{A} < A_t < \overline{A}$, a misinformed poor agent (with effective income below that of the informed rich) has the median effective income; and when $A_t > \overline{A}$, the informed poor have the median effective income. We show in the Appendix that $\frac{A_t}{\underline{A}} > \frac{y_H}{y_L}$, which is the familiar condition that the informed rich are pivotal when the the dispersion in beliefs is larger than the deviation in incomes.

We make 2 key assumptions, which are tantamount to joint restrictions on the behavior of the distribution function $F_L$ and the sensitivity to learning parameter $\mu$. These are: (i) $A_0 < \underline{A}$, and (ii) $\underline{A} < A(\tau_{HI}) < \overline{A}$. The first assumption states that political power is initially held by the informed rich. The second assumption states that if they implement their ideal stage game policy $\tau_{HI}$, the informed rich will cede political power, but not directly to the informed poor. These assumptions largely mirror assumptions in the baseline model.

Let $\overline{\tau}$ be the largest policy that is consistent with the informed rich retaining power. By construction, $A(\overline{\tau}) = A$, which, in conjunction with our other assumptions, implies that $\overline{\tau} < \tau_{HI}$. We are now ready to state the main result:

**Proposition 5.** There exists a threshold $\hat{\tau} < \tau_{HI}$ such that period 0 policy of the informed rich is:

$$
\tau_0^* = \begin{cases} 
\overline{\tau} & \text{if } \overline{\tau} > \hat{\tau} \\
\in (\hat{\tau}, \tau_{HI}) & \text{if } \overline{\tau} < \hat{\tau}
\end{cases}
$$

Furthermore, if $\tau_0^* = \overline{\tau}$, then $\tau_t^* = \overline{\tau}$ for all $t$. Instead, if $\tau_0^* > \overline{\tau}$, then $\tau_t^* = \tau(X(A_t), A_t)$.

Proposition 5 has many similarities to Proposition 2.A. To retain political power, the informed rich must offer a policy no larger than $\overline{\tau}$. If the required distortion is small (i.e. if

---

"Technical note: Because $G$ is not everywhere continuous — it has point masses at $y_L$ and $y_H$ — it may be this condition cannot be satisfied. This will occur if $G(x | A_t) > \frac{1}{2} > \lim_{y \uparrow x} G(y | A_t)$. If so, we take $x$ to be the effective median."
is sufficiently close to $\tau_{HI}$), then the informed rich will distort policy in this way to retain political power. Furthermore, given the stationary environment, they will implement this same policy in all future periods, thus never ceding political power.

By contrast, if the required distortion is large, then the informed rich will cede political power. Importantly, they will continue to distort policy below their stage game ideal (i.e. $\tau^*_0 < \tau_{HI}$). This ensures that the effective income of the new median agent (who will be a misinformed poor agent) is higher than would be the case without the distortion, and therefore that future policies are themselves lower than they would otherwise be. Of course, these subsequent policies may induce additional learning, such that the informed poor eventually become pivotal. But the distortion by the informed rich slows down this process, delaying the transfer of political power, and guaranteeing them more favorable policies along the transition path.

Proposition 5 shows that the key insights of the baseline analysis continue to hold, even when we extend the model to a richer environment. However, it also shows that, in this richer environment, there is scope for more nuanced policy, and that transition dynamics along the equilibrium path may be characterized more by gradualism than an immediate ‘bang-bang’ change.

6 Conclusion

Slippery slope arguments are ubiquitous in political discourse. In this paper, we explored a political economy mechanism that rationalized the slippery slope concern. We first showed that misinformation (that creates policy skepticism) combined with learning by acquaintance, can result in a dynamic where the adoption of a small reform today begets a demand for larger reforms in the future.
We then examined whether awareness of the slippery slope dynamic would result in strategic manipulation of policy to prevent learning — i.e. whether slippery slope concerns would actually cause agents to scuttle otherwise welfare enhancing reforms. Though certain agents may always wish to manipulate policy, in a political economy equilibrium where a majority coalition must support the implemented policy, we show that policy can only be successfully manipulated if two conditions are satisfied. First, the degree of misinformation must be large relative to the baseline level of political disagreement in the polity. Second, informed agents must be relatively more likely to be sophisticated (and thus understand the slippery slope dynamic) than misinformed agents. If these two conditions are satisfied, then a coalition of the sophisticated informed rich, along with misinformed agents can conspire to strategically manipulate policy to prevent learning.

We also explore other possibilities. When the misinformed are relatively more likely to be sophisticated than the informed, we get the opposite effect — policy skeptics strategically over-provide the reform, to entice learning by other voters, that the reform is less worthwhile than they think. This behavior has a ‘learning from mistakes’ flavor, and generates the opposite dynamic — there is policy reversal rather than policy momentum. Additionally, we demonstrate that policy skepticism by the misinformed is crucial to the mechanism: when the misinformed are over-optimistic, neither policy momentum, nor a slippery slope dynamic arise in equilibrium.

Though our model is simple and stylized, we believe that it captures important insights about the nature of decision making in a political economy setting. The robustness of our results to variant assumptions is suggestive that these insights will continue to hold in more complicated models. Amongst many issues to consider investigating are the implications of relaxing various standard assumptions that we take for granted in our analysis, including the full information and common knowledge assumptions. Certainly, there is scope for further theoretical development of the role of learning in a political economy setting, which we leave
for future analysis.

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A Proofs

Proof of Proposition 1. Recall that the ranking of stage game ideal policies is $\tau_{HM} < \tau_{HI} < \tau_{LM} < \tau_{LI}$, and that all naive agents, as well as the sophisticated misinformed agents (since $\Delta(y, A_M) = 0$), have single-peaked preferences. The sophisticated informed agents have potentially non-single-peaked preferences. However, we know that the preferences of the sophisticated informed rich are strictly decreasing whenever $\tau \geq \tau_{HI}$, while the preferences of the sophisticated informed poor are strictly increasing whenever $\tau \leq \tau_{LI}$.

It suffices to show that $\tau_{LM}$ is a majority winner in the first period. Take any policy $\tau < \tau_{LM}$. Then all poor agents, whether informed or not, and whether sophisticated or not — a majority — strictly prefer $\tau_{LM}$ to $\tau$, since they have increasing utility in this region. Similarly, all agents other than the informed poor — a majority — strictly prefer $\tau_{LM}$ to any $\tau > \tau_{LM}$, since utility is strictly decreasing in this region for those agents. Hence $\tau_{LM}$ is the majority winner.

Proof of Propositions 2.A and 2.B. The ranking of stage game ideal policies is now: $\tau_{HM} < \tau_{LM} < \tau_{HI} < \tau_{LI}$. Let $\tau_{HI} < \tau_{HI}$ be the lowest policy that the informed rich will accept that prevents learning. This satisfies:

$$v(\tau_{HI}; y, A_I) + \beta v(\tau_{HI}; y, A_I) = v(\tau_{HI}; y, A_I) + \beta v(\tau_{LI}; y, A_I)$$

Simplifying, we have that $\tau_{HI}$ is the solution to:

$$1 - \left( \frac{\tau_{HI}}{\tau_{HI}} \right) + \ln \left( \frac{\tau_{HI}}{\tau_{HI}} \right) = \beta \left[ 1 - \frac{\tau_{LI}}{\tau_{HI}} + \ln \left( \frac{\tau_{LI}}{\tau_{HI}} \right) \right]$$

Let $t_{HI}$ denote the first period policy that maximizes the informed rich’s lifetime utility. By
construction, we know that:

$$t_{HI} = \begin{cases} 
\tau^\dagger & \text{if } \tau^\dagger \in [\tau_{HI}, \tau_{HI}] \\
\tau_{HI} & \text{if } \tau^\dagger < \tau_{HI} \text{ or } \tau^\dagger > \tau_{HI}
\end{cases}$$

Recall that the informed poor have strictly increasing utility in the region $\tau \leq \tau_{LI}$, and that $t_{HI} \leq \tau_{HI} < \tau_{LI}$. It follows that, for any $\tau < t_{HI}$, $t_{HI}$ is strictly preferred to $\tau$ by both the informed poor and the informed rich — who together constitute a majority.

Suppose $t_{HI} \geq \tau_{LM}$. (In particular, this will be true if $t_{HI} = \tau_{HI}$.) Recall that all misinformed agents have single-peaked preferences. Then, for any $\tau > t_{HI}$, $t_{HI}$ is preferred to $\tau$ by the informed rich and all misinformed agents (since $\tau_{HM} < \tau_{LM} \leq t_{HI}$) — who together constitute a majority. If so, then $t_{HI}$ is a majority winner.

Suppose instead that $t_{HI} < \tau_{LM}$. (This requires that $t_{HI} = \tau^\dagger$, which in turn requires that $\tau^\dagger \in (\tau_{HI}, \tau_{LM})$.) Then $t_{HI}$ cannot be majority preferred since $\tau_{LM}$ is preferred to it by both the informed and misinformed poor (who together constitute a majority). But $\tau_{LM}$ cannot be majority preferred since $\tau_{HI}$ is preferred to it by both the informed poor and the informed rich (who together constitute a majority). Can $\tau_{HI}$ be majority preferred? Clearly there is no policy $\tau > \tau_{HI}$ that is preferred to $\tau_{HI}$ by a majority. The informed rich prefer $\tau^\dagger$ to $\tau_{HI}$. If the misinformed poor also prefer $\tau^\dagger$ to $\tau_{HI}$, then $\tau_{HI}$ cannot be majority preferred. This requires that:

$$v(\tau^\dagger; y_L, A_M) \geq v(\tau_{HI}; y_L, A_M)$$

Let $\tau_{LM}(\beta)$ be the lowest policy that the misinformed poor would accept in preference to $\tau_{HI}$, if the former prevented learning and the latter did not. (It will prove useful to define $\tau_{LM}$ for generic $\beta$, though of course, in this proposition, we take $\beta = 0$, so that the misinformed poor are indifferent to whether there is learning or not.) We have:
By assumption, the informed rich prefer \( \tau^\dagger \) to \( \tau_{HI} \) since \( \tau^\dagger \in (\tau_{HI}, \tau_{LM}) \). If, in addition, \( \tau^\dagger \geq \tau_{LM} \), then the misinformed poor will prefer \( \tau^\dagger \) to \( \tau_{HI} \). Hence, if \( \tau^\dagger \in (\max\{\tau_{HI}, \tau_{LM}\}, \tau_{LM}) \), then a majority prefer \( \tau^\dagger \) to \( \tau_{HI} \) and so there is no majority winner. (Instead, we have found a Condorcet cycle.) By contrast, if \( \tau^\dagger < \max\{\tau_{HI}, \tau_{LM}\} \), then \( \tau_{HI} \) is a majority winner. \( \square \)

**Proof of Proposition 3.** We first note that if \( \tau \) is a majority winner, then \( \tau \in [\tau_{HI}, \max\{\tau_{HI}, \tau^\dagger\}] \). To see this, note that \( \tau_{HI} \) is preferred to any \( \tau < \tau_{HI} \) by all informed agents — a majority. Similarly, the informed rich and the misinformed agents — who together constitute a majority — prefer \( \max\{\tau_{HI}, \tau^\dagger\} \) to any larger policy \( \tau \). (For the informed rich, this is straightforward to see since their utility is decreasing beyond \( \tau_{HI} \) and \( \tau_{HI} \leq \max\{\tau_{HI}, \tau^\dagger\} \). Similarly, the utility of the misinformed poor is decreasing beyond \( \max\{\tau_{LM}, \tau^\dagger\} \), and \( \tau_{LM} < \tau_{HI} \).

If \( \tau^\dagger \leq \tau_{HI} \), it follows immediately that \( \tau_{HI} \) is the majority winner. Next, suppose that \( \tau^\dagger > \tau_{HI} \). Misinformed agents may be willing to support such a policy given that it induces learning and \( \tau_{HI} \) does not. Let \( \tau_{LM} > \tau_{HI} \) be the highest policy that the misinformed poor will accept that induces learning, in preference to \( \tau_{HI} \) which does not. This satisfies:

\[
v(\tau_{LM}; y_L, A_M) + \beta v(\tau_{LM}; y_L, A_M) = v(\tau_{HI}; y_L, A_M) + \beta v(\tau_{HI}; y_L, A_M)
\]

Simplifying, we have that \( \tau_{LM} \) is the solution to:

\[
\frac{\tau_{HI}}{\tau_{LM}} \left(1 - \frac{\tau_{LM}(\beta)}{\tau_{HI}}\right) + \ln \left(\frac{\tau_{LM}(\beta)}{\tau_{HI}}\right) = \beta \left[1 - \frac{\tau_{HI}}{\tau_{LM}} + \ln \left(\frac{\tau_{HI}}{\tau_{LM}}\right)\right]
\]

\[\tag{4}\]

3
If \( \tau^\dagger > \bar{\tau}_{LM} \), then \( \tau_{HI} \) is preferred to \( \tau^\dagger \), and indeed to all \( \tau > \tau_{HI} \), by both the informed rich and the misinformed poor. If so, \( \tau_{HI} \) is the majority winner.

Suppose instead that \( \tau^\dagger \in (\tau_{HI}, \tau_{LM}) \). Then both the informed and misinformed poor — a majority — will prefer \( \tau^\dagger \) to \( \tau_{HI} \), so that \( \tau_{HI} \) cannot be a majority winner. Is \( \tau^\dagger \) a majority winner? We have previously shown that \( \tau^\dagger \) is majority preferred to any \( \tau > \tau^\dagger \). For a policy \( \tau' < \tau^\dagger \) to be majority preferred to \( \tau^\dagger \), it must be that \( \tau' \) is strictly preferred to \( \tau^\dagger \) by both the informed rich and the misinformed poor.

Let \( \tilde{\tau}_{HI}(\tau^\dagger; \beta) < \tau_{HI} \) denote the lowest policy (not inducing learning) that the informed rich would accept in preference to \( \tau^\dagger \). (As before, it will be helpful for future reference to allow \( \tilde{\tau}_{HI} \) to be a function of \( \beta \). But in this context, we know that \( \beta = 0 \) for the informed rich.) This satisfies:

\[
v(\tilde{\tau}_{HI}; y_H, A_I) + \beta v(\tau_{HI}; y_H, A_I) = v(\tau^\dagger; y_H, A_I) \]

Simplifying, we have that \( \tilde{\tau}_{HI} \) is the solution to:

\[
\frac{\tau^\dagger - \tilde{\tau}_{HI}}{\tau_{HI}} + \ln \left( \frac{\tilde{\tau}_{HI}}{\tau^\dagger} \right) = \beta \left[ 1 - \frac{\tau_{LI}}{\tau_{HI}} + \ln \left( \frac{\tau_{LI}}{\tau_{HI}} \right) \right]
\]

(5)

It is straightforward to show, by the implicit function theorem, that \( \frac{\partial \tilde{\tau}_{HI}}{\partial \tau^\dagger} < 0 \). The further to the right of \( \tau_{HI} \) is \( \tau^\dagger \), the greater will be the range of policies to the left of \( \tau_{HI} \) that the informed rich would be willing to accept instead. Additionally, \( \tilde{\tau}_{HI} \uparrow \tau_{HI} \) as \( \tau^\dagger \downarrow \tau_{HI} \).

Similarly, let \( \tilde{\tau}_{LM}(\tau^\dagger; \beta) > \tau_{LM} \) denote the highest policy (not inducing learning) that the misinformed poor would accept in preference to \( \tau^\dagger \). This satisfies:

\[
v(\tilde{\tau}_{LM}; y_L, A_M) + \beta v(\tau_{HI}; y_L, A_M) = v(\tau^\dagger; y_L, A_M) \]

This satisfies:

\[
v(\tilde{\tau}_{LM}; y_L, A_M) + \beta v(\tau_{HI}; y_L, A_M) = v(\tau^\dagger; y_L, A_M) + \beta v(\tau_{LM}; y_L, A_M)
\]
Simplifying, we have that $\tilde{\tau}_{LM}$ is the solution to:

$$\frac{\tau^\dagger - \tilde{\tau}_{LM}}{\tau_{LM}} + \ln \left( \frac{\tilde{\tau}_{LM}}{\tau^\dagger} \right) = \beta \left[ \frac{\tau_{HI}}{\tau_{LM}} - 1 + \ln \left( \frac{\tau_{LM}}{\tau_{HI}} \right) \right]$$

(6)

Again, by the implicit function theorem, $\frac{\partial \tilde{\tau}_{LM}}{\partial \tau^\dagger} > 0$. The further to the right of $\tau_{HI}$ is $\tau^\dagger$, the greater will be the range of policies to the right of $\tau_{LM}$ that the misinformed poor would be willing to accept instead. Additionally, $\tilde{\tau}_{LM} < \tau_{HI}$ when $\tau^\dagger = \tau_{HI}$.

If $\tilde{\tau}_{HI}(\tau^\dagger) < \tilde{\tau}_{LM}(\tau^\dagger)$, then any policy $\tau' \in (\tilde{\tau}_{HI}, \tilde{\tau}_{LM})$ is majority preferred to $\tau^\dagger$ (since it is preferred by the informed rich and the misinformed poor). Moreover, this generates a Condorcet cycle, since $\tau_{HI}$ is preferred to any such $\tau'$ by a majority (i.e. the informed agents), $\tau^\dagger$ is preferred to $\tau_{HI}$ by a majority (i.e. the poor agents), and $\tau'$ is preferred to $\tau^\dagger$ by a majority (i.e. the informed rich and the misinformed poor). By contrast, if the condition is not met, then $\tau^\dagger$ is a majority winner.

Finally, since $\tilde{\tau}_{LM}(\tau^\dagger) < \tilde{\tau}_{HI}(\tau^\dagger)$ when $\tau^\dagger = \tau_{HI}$, and since $\frac{\partial \tilde{\tau}_{HI}}{\partial \tau^\dagger} < 0$ and $\frac{\partial \tilde{\tau}_{LM}}{\partial \tau^\dagger} > 0$, then there exists some $\bar{\tau}$ s.t. $\tilde{\tau}_{LM}(\bar{\tau}) = \tilde{\tau}_{HI}(\bar{\tau})$, and the condition $\tilde{\tau}_{HI}(\tau^\dagger) < \tilde{\tau}_{LM}(\tau^\dagger)$ is satisfied only if $\tau^\dagger > \bar{\tau}$.

\[\square\]

**Proof of Proposition 4.** First, suppose that $\tau^\dagger \geq \tau_{HI}$. Then, the lifetime preferences of the (sophisticated) informed rich are single-peaked and achieve a maximum at $\tau_{HI}$ — which is qualitatively similar to what their preferences would be were they naive. Then, by the same logic as in the proof of Proposition 3, if $\tau^\dagger > \tilde{\tau}_{LM}$, the majority preferred policy will be $\tau_{HI}$. If $\tau^\dagger \in [\tau_{HI}, \tilde{\tau}_{LM}]$, then a majority winner will exist only if $\tilde{\tau}_{HI}(\tau^\dagger) \geq \tilde{\tau}_{LM}(\tau^\dagger)$, and if so, the majority winner will be $\tau^\dagger$.

The only potential difference from the proof of Proposition 3 is in the behavior of the functions $\tilde{\tau}_{HI}(\tau^\dagger)$ and $\tilde{\tau}_{LM}(\tau^\dagger)$, defined by equations (5) and (6) above. In particular, since the informed rich are now sophisticated, $\tilde{\tau}_{HI}$ should be calculated using $\beta > 0$. It remains the
case that $\frac{\partial \tilde{\tau}_{HI}}{\partial \tau^\dagger} < 0$ and $\frac{\partial \tilde{\tau}_{LM}}{\partial \tau^\dagger} > 0$. However, now $\tilde{\tau}_{HI}(\tau_{HI}) = \tau_{HI} < \tau_{HI}$ (where $\tau_{HI}$ is defined by equation (2) in the proof of Proposition 2.A). Also, by construction, $\tilde{\tau}_{LM}(\tau_{HI}) = \tau_{LM}$ (where $\tau_{LM} > \tau_{LM}$ is defined by equation (2) in the proof of Proposition 2.B, though now with $\beta > 0$). Hence, if $\tau_{HM} \leq \tau_{LM}$, then $\tilde{\tau}_{HI}(\tau^\dagger) \leq \tilde{\tau}_{LM}(\tau^\dagger)$ for all $\tau^\dagger \geq \tau_{HI}$, and so there will be no majority winner. By contrast, if $\tau_{HM} > \tau_{LM}$, then there will exist $\tilde{\tau} > \tau_{HI}$ s.t. $\tilde{\tau}_{HI}(\tau^\dagger) > \tilde{\tau}_{LM}(\tau^\dagger)$ whenever $\tau^\dagger < \tilde{\tau}$. If so, $\tau^\dagger$ will be the majority winner, and if not, a Condorcet cycle will exist.

Next, suppose $\tau^\dagger < \tau_{HI}$. Now, the informed rich may have an incentive to strategically manipulate policy to prevent learning, whilst the misinformed may seek to do so to induce learning. Let us explicitly differentiate these. For some small $\varepsilon > 0$, let $\tau^\dagger_- = \tau^\dagger - \varepsilon$ denote the highest policy that prevents learning, and $\tau^\dagger_+ = \tau^\dagger + \varepsilon$ denote the lowest policy that induces it. The informed agents (who constitute a majority) will prefer $\tau^\dagger_-$ to any policy $\tau < \tau^\dagger_-$. The poor agents (who constitute a majority) must prefer $\tau^\dagger_+$ to $\tau^\dagger_-$, since they perceive learning as beneficial, and the informed agents will prefer $\tau_{HI}$ to any $\tau \in [\tau^\dagger_+, \tau_{HI})$. Hence, no policy $\tau < \tau_{HI}$ can be majority winning. Moreover, the informed rich and the misinformed agents (who constitute a majority) prefer $\tau_{HI}$ to any $\tau > \tau_{HI}$. The only candidate to be a majority winner is $\tau_{HI}$.

We must check if there is a policy $\tau'$ that defeats $\tau_{HI}$ in a pair-wise contest. Given the above reasoning, if such a policy exists, it must be that $\tau' \leq \tau^\dagger_-$, and the coalition supporting it must include both the informed rich and the misinformed poor. Then, by construction, $\tau' \geq \tau_{HI}$ (which guarantees that the informed rich prefer it to $\tau_{HI}$) and that $\tau' \leq \tau_{LM}$ (which is required for the misinformed poor prefer it to $\tau_{HI}$). Hence, there will be no majority winner (and thus a Condorcet cycle will exist) if $\tau_{HI} \leq \tau_{LM}$. Else, $\tau_{HI}$ will be a majority winner. 

**Proof of Proposition 5.** Begin by considering how learning affects beliefs. Given a policy
\( \tau \), an agent with belief \( A \leq A_I \) updates their belief if:

\[
A < A_I - \frac{\mu}{\ln(\tau y)} = A(\tau)
\]

Notice that learning truncates the distribution of beliefs from below. Let \( A_t \) denote the lowest belief about \( A \) that some agent may profess at the start of time \( t \), given learning to that point. It must be that \( A_t = \max\{A(\tau_{t-1}), A_{t-1}\} \). Then, given a sequence of policies \( \{\tau_0, \ldots, \tau_{t-1}\} \), the induced sequence of minimal beliefs \( \{A_0, \ldots, A_t\} \) is weakly increasing.

At the start of time \( t \), the fraction of agents who have income \( y_i \) and are informed is \( \phi_i[\gamma_i + (1 - \gamma_i)F_i(A_t)] \) — of whom, a fraction \( \phi_i \gamma_i \) were informed from the start, and a fraction \( \phi_i(1 - \gamma_i)F_i(A_t) \) became informed through acquaintance with policy. Recall, the effective income of a type \((y, A)\) agent is \( x(y, A) = y \frac{A}{A} \geq y \). Then, the distribution of effective incomes at time \( t \) is:

\[
G(x, | A_t) = Pr[x(y, A) \leq x | A_t] = \sum_{i \in \{H, L\}} 1[x \geq y_i] \phi_i \left( \gamma_i + (1 - \gamma_i) \left[ F_i(A_t) + 1 - F_i \left( \frac{y_i}{x} A_I \right) \right] \right)
\]

Suppose, at time \( t \), the agent with the median effective income is informed and rich. This requires that \( G(y_H | A_t) \geq \frac{1}{2} \) and \( \lim_{x \uparrow y_H} G(x | A_t) < \frac{1}{2} \). The first condition is guaranteed to hold given the assumptions that \( \gamma_L, \gamma_H > \frac{1}{2} \). The second condition requires that:

\[
\phi_L \left( \gamma_L + (1 - \gamma_L) \left[ F_L(A_t) + 1 - F_L \left( \frac{y_L}{y_H} A_I \right) \right] \right) < \frac{1}{2}
\]

\[
A_t < F_L^{-1} \left( F_L \left( \frac{y_L}{y_H} A_I \right) - \frac{1 - \phi_L}{1 - \gamma_L} \right) = A
\]

The assumptions that the poor are a majority (\( \phi_L > \frac{1}{2} \), but that the informed poor are initially a minority (i.e. \( \phi_L \gamma_L < \frac{1}{2} \)), ensures that \( \frac{1 - \phi_L}{1 - \gamma_L} \in (0, 1) \). Then since \( F \) is strictly increasing, \( A < \frac{y_L}{y_H} A_I \).

The agent with the median effective income is informed and poor if \( G(y_L | A_t) \geq \frac{1}{2} \). This
requires that:

\[
\phi \left( \gamma_L + (1 - \gamma_L) F_L(A_t) \right) \geq \frac{1}{2}
\]

\[
A_t \geq F_L^{-1} \left( \frac{1}{\frac{1}{2} \phi_L} - \gamma_L \right) = \bar{A}
\]

where \(\frac{1}{\phi_L} - \gamma_L > 0\) by assumption. Of course, if \(A_t \geq \bar{A}\), then \(A_{t'} \geq \bar{A}\) for all \(t' > t\), since \(\{A_t\}\) is a non-decreasing sequence.

If at time \(t\), \(A_t \in (\underline{A}, \bar{A})\), so that neither the informed poor nor the informed rich are not pivotal, then the median effective income must be below \(y_H\) but above \(y_H\) (i.e. the median effective income earner is from the misinformed poor). Denoting it by \(X(A_t)\) we have:

\[
\phi_L \left( \gamma_L + (1 - \gamma_L) \left[ F_L(A_t) + 1 - F_L \left( \frac{y_L}{X(A_t)} A_I \right) \right] \right) = \frac{1}{2}
\]

\[
X(A_t) = \frac{y_L A_I}{F_L^{-1} \left( F_L(A_t) + \frac{1 - \frac{1}{2} \phi_L}{1 - \gamma_L} \right)}
\]

Moreover, since this agent is naive, and using similar logic to Proposition 1, in this scenario, we know that the equilibrium policy at time \(t\) will simply be the ideal policy of the median effective income earner. Denote this:

\[
\tau(A_t) = \frac{A_I}{X(A_t)} = \frac{F_L^{-1} \left( F_L(A_t) + \frac{1 - \frac{1}{2} \phi_L}{1 - \gamma_L} \right)}{y_L}
\]

By assumption \(A_0 < \underline{A}\), so the informed rich are initially pivotal. Let \(\underline{\tau}\) be defined by \(\mathcal{A}(\underline{\tau}) = \underline{A}\). \(\underline{\tau}\) is the largest policy that the informed rich can offer and still retain political power. Also by assumption, \(\underline{A} < \mathcal{A}(\tau_{HI})\), which implies that \(\underline{\tau} < \tau_{HI}\) — the informed rich must downwardly distort policy to retain political power. (Obviously, they have no incentive to distort below \(\underline{\tau}\).) If it is optimal to implement this policy, then they will retain political power, and by the stationarity in the problem, they will offer the same policy again in each
future period. Their lifetime utility will be $1 - \beta v(\tau; y_H, A_I)$.

Suppose the informed rich implement a policy $\tau > \tau$. Let $V_{HI}(A)$ denote the lifetime utility of the informed rich when the current lowest belief is $A > A_I$. Given the above discussion, the current policy will be $\tau(A)$ and the evolution of beliefs will be governed by $A' = \max\{A(\tau(A)), A\}$. Hence, $V_{HI}$ is characterized by the Bellman Equation:

$$V_{HI}(A) = v(\tau(A); y_H, A_I) + \beta V_{HI}(\max\{A(\tau(A)), A\})$$

It is easy to verify that the Bellman Operator satisfies Blackwell’s sufficient conditions (since the current policy is independent of the future utility), and so a unique value function exists. Straightforwardly, since $\tau(A) = \tau_{LI}$ for all $A \geq \overline{A}$, then $V_{HI}(A) = \frac{1}{1-\beta} v(\tau_{LI}; y_H, A_I)$ for all $A \geq \overline{A}$ (which is constant in $A$).

Next, since $\tau(A)$ is increasing in $A$ and $v(\tau; y_H, A_I)$ is strictly decreasing in $\tau$ for $\tau > \tau_{HI}$, it follows that the Bellman operator maps decreasing functions onto decreasing functions. Hence $V_{HI}$ is weakly decreasing in $A$. Moreover, it is strictly decreasing whenever $A \in (\underline{A}, \overline{A})$.

To see this, suppose $\underline{A} < A_1 < A_2 < \overline{A}$. Then, $\tau(A_1) < \tau(A_2)$, and so $v(\tau(A_1); y_H, A_I) > v(\tau(A_2); y_H, A_I)$. Furthermore, $\max\{A(\tau(A_1)), A_1\} \leq \max\{A(\tau(A_2)), A_2\}$, and so, since $V$ is weakly decreasing:

$$V(A_1) = v(\tau(A_1); y_H, A_I) + \beta V_{HI}(\max\{A(\tau(A_1)), A_1\}) > v(\tau(A_2); y_H, A_I) + \beta V_{HI}(\max\{A(\tau(A_2)), A_2\}) = V(A_2)$$

If the informed rich decide to cede political, which policy should they choose? Their problem is:

$$\max_{\tau \in [\underline{\tau}, \tau_{HI}]} v(\tau; y_H, A_I) + \beta V_{HI}(A(\tau))$$

The first order condition implies that:

$$v'(\tau^*; y_H, A_I) + \beta V_{HI}'(A(\tau^*)) \frac{\partial A(\tau^*)}{\partial \tau} = 0$$
Since $\tau^* \leq \tau_{HI}$ and $A(\tau_{HI}) < \overline{A}$ (by assumption), then $A(\tau^*) \in (\underline{A}, \overline{A})$, and so $\frac{\partial A(\tau^*)}{\partial \tau} > 0$ and $V'_{HI} < 0$. But then, the first order conditions imply that $v'(\tau^*; y_H, A_I) > 0$, and so $\tau^* < \tau_{HI}$. Even if the informed rich plan to cede power, they should still downwardly distort policy in the current period. Let $V^*_{HI} = v(\tau^*; y_H, A_I) + \beta V_{HI}(A(\tau^*))$ denote the agent’s lifetime utility if they cede power.

Finally, should the informed rich cede power or not? This involves a comparison of the utilities from the two approaches. They should retain power if:

$$\frac{1}{1-\beta} v(\tau; y_H, A_I) \geq V^*_{HI}$$

Then, since $v(\tau; y_H, A_I)$ is increasing in $\tau$ (and $V^*_{HI}$ is constant in $\tau$), the informed rich should retain power by choosing $\tau = \underline{\tau}$ provided that $\underline{\tau}$ is sufficiently large (i.e. $\underline{\tau} > \hat{\tau}$, for some appropriate threshold $\hat{\tau}$). Else it should cede power by implementing $\tau^* \in (\hat{\tau}, \tau_{HI})$. 

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