Brahmins versus Mandarins: A Theory on the Origin and Persistence of (In)dependent Intellectual Elites*

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Abstract

Having a class of intellectual elites relatively independent of political authority is indispensable to developing and maintaining a tradition of the rule of law, but how does such independence, or its absence, originate and persist? I model the strategic, dynamic interaction between a political authority, an intellectual elite, and a political audience, whose support is critical to the authority's survival and can be influenced by the intellectual elite through communication. The model helps to articulate a theory: independent intellectual elites communicate more informatively, which makes their influence more effective, provided the audience is not too naive; the authority permits such independence only if his survival relies on such influence; and since today's intellectual elites can shape such reliance tomorrow through cultivating the intellectual tradition of society but remain subject to their (in)dependent status today, this status may persist in equilibrium. As illustrative tests of the theory, I provide historical narratives about the formative phases of two of the oldest, most continuous cultural traditions: Vedic India and Late Shang–Western Zhou China.

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There are three professions which are entitled to wear a gown: the judge, the priest, the scholar. This garment stands for its bearer's maturity of mind, his independence of judgment, and his direct responsibility to his conscience and to his God. It signifies the inner sovereignty of those three interrelated professions: they should be the very last to allow themselves to act under duress and yield to pressure.

Ernst H. Kantorowicz, *The Fundamental Issue: Documents and Marginal Notes on the University of California Loyalty Oath* (1950, p. 6)

[The priest says:] "this man, O ye (people) [e.g., *Kuru*s, *Pañcāla*s, *Bharata*s], is your king, *Soma* is the king of us *Brāhmaṇa*s!" He thereby causes everything here to be food for him (the king); the *Brāhmaṇa* alone he excepts: therefore the *Brāhmaṇa* is not to be fed upon, for he has *Soma* for his king.

Śatapatha Brāhmaṇa 5.3.3.12 (c. 700 BCE; translation by Eggeling, 1894, p. 72)

My father's accomplishments were not such as would bring the imperial seal of investiture among the nobility; writers of history and astronomical calculations are close in status to diviners and soothsayers. His Majesty finds amusement in such, and we are kept by him on a par with singers and acrobats, thus held in contempt by the common opinion. Suppose that I had bowed to the law and accepted execution; it would have been like the loss of a single hair from a herd of cattle, a death no different from that of an ant or a cricket. And the world would never have granted that I might be compared to those who could die for principle. 僕之先人非有剖符丹書之功，文史星曆近乎卜祝之間，固主上所戲弄，倡優畜之，流俗之所輕也。假令僕伏法受誅，若九牛亡一毛，與螻蟻何異？而世又不與能死節者比。

Sima Qian, *Letter in Reply to Ren An* 報任安書 (c. 91 BCE; original as in Ban, 1962, p. 2732; translation by Owen, 1996, p. 139)

1 Introduction

The rule of law – simply put, the social belief that no one is above the law – has been considered fundamental to individual liberty, civil peace, and economic prosperity (e.g., Aristotle, 1998; Locke, 2003; Montesquieu, 1989; Dicey, 1982; Hayek, 1960; Haggard et al., 2008; Fukuyama, 2011). Examining its evolution, the scholarship in legal and political his-

tory, factoring in variations over time and space, has emphasized the indispensable role of the tradition of having an intellectual elite that are relatively independent of the political authority; in particular, studies have contrasted China, where the mandarins – scholar bureaucrats – served the emperor and helped develop a system of rule by law, with many other civilizations, where an independent intellectual elite – the brahmins, orators and jurists, philosophers, rabbis, priests, ulemas, or some others – took care of their respective tradition of the rule of law (e.g., Berman, 1983; Brown, 1992; Yan, 1996, 2001a,b, 2024a,b; Hoye, 1997; Hallaq, 2004; Tamanaha, 2004; El Shamsy, 2013; Herzog, 2018; Pirie, 2021; Huq, 2023; Xu, 2025). This raises a key question: how did the (in)dependence of these intellectual elites originate, and how could such status have persisted to become a tradition?

Exploring this question may help us make progress beyond the existing economics literature. The literature in economic history has documented the pivotal role of knowledge elites in economic and political development, while largely taking their status, or its change, as exogenous.[1] The political-economic literature on legitimacy and religion has revealed the centrality of the strategic interaction between a political authority and some legitimating agents, who are often intellectual elites, in understanding long-run economic, political, and institutional performances, but these legitimating agents are generally assumed – usually implicitly, but explicitly in the conceptual framework of Greif and Rubin (2024b, p. 296) – to be relatively independent of the political authority, so as to be capable of legitimizing it, and thus so called; also, the legitimation process is usually treated either as a black box, or only heuristically discussed, but not formally and specifically modeled.[2]

The purpose of this paper is thus to provide a model – not *the* model – that is as stylized as possible, but still specific enough to help us explore the afore-raised question in theory and history. In particular, in its premises, our model needs to be specific enough about what intellectual elites do, how they do it, and how they are received, and what being (in)dependent means, so as to shed some light on the origin and persistence of some very

[1]For examples of this thread of literature, see Mokyr (2005, 2016), Cantoni and Yuchtman (2013), Cantoni and Yuchtman (2014), Moser et al. (2014), Squicciarini and Voigtländer (2015), Bai and Jia (2016), Cantoni et al. (2018), Chen et al. (2020), Dippel and Heblich (2021), Xue (2021), Gethin et al. (2022), Bai et al. (2024), Dittmar and Meisenzahl (2024), Dewitte et al. (2025), Xu (2025), Lanzara et al. (2026), and Melillo et al. (2026). In particular, the literature suggests a potentially backward nature of the Chinese imperial examination system, as it exhausted intellectual resources in Chinese society for a unified, imperial rule, especially when juxtaposed with the political fragmentation and supportive environment that early modern European intellectual elites enjoyed (e.g., Bai and Jia, 2016; Mokyr, 2016; Xu, 2025).

[2]For surveys of this literature, see, for example, Aldashev and Platteau (2014), Becker and Pfaff (2024), Greif and Rubin (2024b), Acemoglu and Robinson (2025), and Rubin (2025a,b). Examples of specific studies are not limited to Coşgel and Miceli (2009), Rubin (2011, 2017), Coşgel et al. (2012a,b, 2018, 2020), Johnson and Koyama (2013, 2019), Auriol and Platteau (2017), Cantoni et al. (2018), Pant (2018), Bisin et al. (2019, 2024), Chen and Fan (2021), Auriol et al. (2023), Bentzen and Gokmen (2023), Gitmez et al. (2023), Greif and Rubin (2024a), and Shera (2025).

long traditions of (in)dependent intellectual elites.

The first premise of our model is a "communication" premise: being intellectual, intellectual elites have their own way of seeing things and can communicate that to others in society – in our model, to a political audience whose support is critical to the incumbent political authority's survival. Importantly, following the literature of informational economics, the audience processes such communication not too naively, i.e., with Bayesian updating in our model (e.g., survey by Kamenica, 2019).

The second premise of our model is an "independence" premise: we read whether the intellectual elite in our model has a dependent or independent status as whether part of their status quo payoff is conditional on them having not acted against the political authority – in the context of the afore-mentioned communication, not having messaged negatively about the authority. This reading follows the key insight from the neo-Roman, independence approach to liberty in political philosophy, i.e., liberty, as independence, is the status in which one is not subject to the arbitrary power of any other person, organization, or the state, and the fear of repercussion from such power anchors the psychology of an unfree, dependent person (e.g., Skinner, 1998, 2022, 2025).[3]

The independence premise implies that a dependent intellectual elite would communicate with the audience less freely. Given that, the communication premise implies that the audience will find their message less informative, and the intellectual elite's influence over the audience will suffer accordingly. Such weaker influence, however, can be welcomed by the political authority, if the audience's support for the authority would be stronger in the absence of such influence. Therefore, a political authority not relying on the intellectual elite's influence would push for a more dependent status of the intellectual elite, while the opposite holds true for a political authority in greater need of such influence – hereby a theory on the origin of the (in)dependent status of intellectual elites.

About the persistence of such status, in comes the third premise of our model – a "cultivation" premise: the intellectual elite today in our model has the potential to raise the future incumbent authority's reliance on her influence. This is consistent with the fact recognized by legal and political historians that intellectual elites are instrumental in sustaining

[3]Elazar (2022, p. 692–694) and Skinner (2025, p. 230) persuasively argue that Adam Smith essentially adopts this approach when discussing civil liberty in *The Wealth of Nations* (e.g., Smith, 1981, p. 399–400); Weingast (2023, p. 154) also notes Smith's primary concern about the threat of arbitrary power to liberty. For examples of classical accounts of the "continual anxiety" that "stems from …living in dependence on the arbitrary will of a master or ruler" and the "servility" and "obsequious slavishness" such dependence breeds among the common people *and* the political elite (Skinner, 2025, p. 22–23), see Tacitus's *Histories* (1.32, 1.90, 1925, p. 56–57, 154–157; 4.62, 1931, p. 118–119) and *Annals* (3.65–70, 1931, p. 624–635). For the intellectual tradition that views the "abject spirit of slavishness" as an almost "certain" result of being "subject to the will of others [and] arbitrary and despotic power" (Skinner, 2025, p. 109), see Skinner (1998, p. 87–96; 2025, p. 22–24, 109–111).

and developing the intellectual tradition of society, thus capable of shaping its social, political, cultural, and legal environment over time (afore-cited).[4] But, given the independence premise, a dependent intellectual elite would be reluctant to fulfill such potential, as she fears the potentially permanent repercussion for acting against the political authority – in our model, if she raises the future incumbent authority's reliance on her influence. A steady state would thus emerge in dynamics, with a political authority not in much need of the intellectual elite's influence, and an intellectual elite lacking independence – hereby a theory on the persistence of such dependent intellectual elites. Key to this persistence is the potential permanence of the repercussion – even the intellectual elite's mere position in the game is subject to the authority's arbitrary power, and she lacks any entitlement in front of such power – and any dependent intellectual elite's fear of such repercussion; this is because, if the intellectual elite were sufficiently sure that any repercussion would only be transient, and if she were sufficiently patient, then she would, despite the repercussion, choose to raise the future incumbent authority's reliance on her influence, which would lead to her greater independence, thus preventing the dependent status from persisting.

An independent intellectual elite, on the contrary, has no repercussion to fear, so she would fulfill her potential to raise the future need of influence from the incumbent authority without much difficulty. Understanding that, the incumbent authority today may be tempted to make the intellectual elite less independent right now, but for an authority relying on her influence to survive today, the immediate survival concern can dominate, such that the authority will still prefer an independent intellectual elite today. Another steady state would thus emerge in dynamics, with a political authority in great need of the intellectual elite's influence, and an independent intellectual elite – hereby a theory on the persistence of such independent intellectual elites.

To examine the relevance and usefulness of the theory, the ideal econometric analysis may be to exploit quasi-randomly assigned shocks to the degree of reliance of the political authority on the influence of intellectual elites across a large number of civilizations in their very early phases, and examine the impact dynamics of such shocks. Admittedly, it may not be very feasible to assemble such a sample. I thus turn to historical narratives about early India and China, as crude, yet illustrative tests of the theory and examples of its potential applications. These two cases are chosen because, first, India and China are two of the oldest and most continuous cultural traditions (e.g., Kulke and Rothermund, 2016, p. viii; Finer, 1997, p. 444). Second, the brahmins in India and the mandarins in China are viewed as two archetypes of intellectual elites that were relatively independent or not of

[4]In economics, Rubinstein (2006, p. 882) recognizes that "a good model can have an enormous influence on the real world, not by providing advice or by predicting the future, but rather by influencing culture."

the political authority, respectively (e.g., Dumont, 1998; Kulke and Rothermund, 2016; Huq, 2023; Xu, 2025). Finally, early India and China have received arguably less attention from economists, compared with later phases of Indian and Chinese histories and early phases of other civilizations (e.g., Bai and Jia, 2016; Mayshar et al., 2017, 2022; Donaldson, 2018; Ko et al., 2018; Barjamovic et al., 2019; Allen et al., 2023; Xu, 2023; Chen, 2024; Jia et al., 2024; Ticku et al., Forthcoming; survey by Heldring, 2025).[5]

For early India, I focus on the transition from the Early (c. 1500–1000 BCE) to the Later Vedic age (c. 1000–600 BCE). This transition made "the formative phase of Indian culture" (Kulke and Rothermund, 2016, p. 18; also Thapar, 2000b, p. 310). In particular, it saw the formation of the *varṇa* system, with the brahmins at the apex of the social hierarchy, and the emergence of the Indian tradition of the state, with the *rājā*s as the political authority, from a formerly tribal, lineage society (e.g., Ghoshal, 1945; Sharma, 1959, 1990a; Thapar, 1990; Kulke, 1992; Witzel, 1997; Kulke and Rothermund, 2016). I demonstrate that our theory may help us understand the correlation between the two processes, and the distinctive structure of the social hierarchy.

For early China, I examine the transition from the Late Shang (c. 1250–c. 1046 BCE) to the Western Zhou era (c. 1046–771 BCE). This was "the constitutive period" of Chinese civilization (Finer, 1997, p. 444). In particular, it saw the rise of a regionally decentralized authoritarian, illiberal state, i.e., the Chinese state, and the conceptual innovation of the Mandate of Heaven as the legitimacy theory of such a state (e.g., Creel, 1970; Li, 2008; Hsu, 2018). I show that our theory may shed light on why intellectual elites did not emerge as an independent class then in China, and what roles the Chinese state and the Mandate of Heaven may have played in the process.

In our model, the intellectual elite communicates with a political audience who processes such communication by Bayesian updating – the communication premise – while the political authority commits to a level of (in)dependence of the intellectual elite, which affects their choice of communicative strategy, and thus their influence over the audience. As such, our model mimics the Bayesian persuasion protocol in informational economics, where an informational outlet, trying to persuade an audience, commits to a scheme of informational control (e.g., Rayo and Segal, 2010; Kamenica and Gentzkow, 2011; surveys by Bergemann and Morris, 2019; Kamenica, 2019). This protocol has seen an exploding number of applications in political economy recently and, in particular, on propaganda and censorship in

[5]As notable exceptions, Schönholzer and Francois (2023) and Flückiger et al. (Forthcoming) cover the Indus civilization (c. 2600–1900 BCE) and the Erlitou culture (c. 1900–1500 BCE) in their global data sets with succinct case studies. These two periods were even earlier than the periods I focus on in this paper, but the link between these periods, respectively, still calls for more historical and archaeological research (e.g., Kulke and Rothermund, 2016, p. 10–11; Liu and Chen, 2012, p. 397–399).

non-democratic settings (e.g., surveys by Little, 2023; Egorov and Sonin, 2024).[6] In line with the main insight from these applications, in our model, for the intellectual elite, i.e., an informational outlet, to be persuasive to the audience, their message must be informative. That said, these applications do not conceptualize (in)dependence of the informational outlet as being subject or not to arbitrary power of the authority, and thus potentially permanent repercussion for siding against the authority, which is our approach; they do not focus on how such status may persist over time, either.

Our approach to the (in)dependent status of intellectual elites – the independence premise – follows Jia et al. (2024) and Persico (Forthcoming), who model the degree of liberty against a political authority – independence in our model – as how much of one's status quo payoff is conditional on having always been siding with the political authority, formalizing the neo-Roman, independence approach to liberty (afore-cited). Nevertheless, these two papers focus on the power structure of society and its implications for political stability, and policy treatment and provision of public good, respectively. In an alternative approach, Li et al. (2024) model the extent of liberty as the degree of veto power against political violence, while focusing on its implications for institutions safeguarding civil peace. All these studies do not involve any communicative process.

The literature on institutional persistence has suggested that such persistence can result from a simple institutional stasis, where power begets power (e.g., Acemoglu et al., 2021), or the potential change-maker's worries about the institutional dynamics after a change (e.g., Fernandez and Rodrik, 1991; Acemoglu and Robinson, 2006; Acemoglu et al., 2010, 2012, 2015, 2018). Our proposed theory for the persistence of (in)dependent intellectual elites is not a theory of simply power begetting power, since the political authority and intellectual elite in our model both have their turn to shape the institutional environment. It is not about the players worrying about the implications of future institutional changes, either: the main driver behind the persistence of an independent intellectual elite in our model is the political authority's immediate concern for survival, such that it would give up the chance to have a dependent intellectual elite in the future; the main driver behind the persistence of a dependent intellectual elite is that such an intellectual elite fears an immediate, but potentially permanent repercussion, such that they give up the chance to make their position independent in the future. Our theory thus clarifies that it is the whole position in the game that is at stake for both the political authority and intellectual elites when it comes to the persistence of the latter's (in)dependent status.

[6]For examples of these applications, see Edmond (2013), Gehlbach and Sonin (2014), Hollyer et al. (2015), Shadmehr and Bernhardt (2015), Guriev and Treisman (2020), Boleslavsky et al. (2021), Kolotilin et al. (2022), Egorov and Sonin (2024), Gitmez et al. (2025), Sonin (2025), and Gehlbach et al. (2026).

The literature has also suggested that institutional persistence can be induced by a failure of coordination among potential beneficiaries of a change (e.g., Weingast, 1997; Kuran, 2005; Acemoglu et al., 2021), or by a particular institutional design (e.g., Barbera and Jackson, 2004; Li et al., 2024). Surely important, I abstract away from these issues in our model. As we can interpret the intellectual elite shaping the future need of the political authority for their influence – the cultivation premise – as them shaping the political culture, our theory can be seen as an example of how institutional persistence can result from a complementarity between cultural and institutional dynamics (e.g., Bisin and Verdier, 2024; Bisin et al., 2024).

Our historical narratives enrich our understanding of the foundational periods of Indian and Chinese civilizations. For India, there has been extensive historical work on the rise of the *varṇa* system, with most focusing on the co-rule of the *rājanya* or *kṣatriya* and the brahmins (e.g., Ghoshal, 1945; Sharma, 1959, 1990a; Kosambi, 1975; Thapar, 1990; Witzel, 1997; Jha, 1998), but not specifically about why the brahmins were on top even relative to the *rājanya* or *kṣatriya*, which has been long considered a defining feature of the system (e.g., Pargiter, 1922; Sharma, 1959; Dumont, 1998, 2024; Heesterman, 1985; Thapar, 1990; Kulke and Rothermund, 2016), and most assuming limited informational agency for the ruled (e.g., Sharma, 1959; Thapar, 1990; Roy, 1994). Our narrative provides an explanation, based on the informational agency of the ruled, for why the brahmins topped the system – the pinnacle position of the brahmins in the system may have been crucial for effective communication of the *rājā*'s kingly power to the ruled – and for why all this happened in the Later Vedic age – an era of deep social and economic changes and mounting political aspirations.

For China, fundamental features of Chinese society today still include a regionally decentralized or administered, authoritarian or totalitarian, illiberal state as a governance structure, the Mandate of Heaven as a theory of legitimacy, and the perceived absence of a significant class of independent intellectual elites (e.g., Yan, 1996, 2024a; Zhao, 2009; Xu, 2011, 2025; Acemoglu and Robinson, 2025; Qin, 2025). Our narrative clarifies their historical origin and interplay at their very beginning: during the transition from the Late Shang to the Western Zhou era, a historical challenge for control of people and resources was met by the rise of a state of this particular structure and the formation and acceptance of the Mandate of Heaven; as a result, the opportunity to have an independent intellectual elite was foregone, and they were to be bureaucratized into the rising Chinese state.

The paper is organized as follows. Section 2 presents the model with the communication and independence premises as a static baseline, deriving our theory on the origin of (in)dependent intellectual elites; Section 3 extends the static baseline dynamically with the cultivation premise, leading to the theory on the persistence of such (in)dependent status. Sections 4 and 5 provide the historical narratives about early India and China, respectively.

Section 6 concludes with a few remarks.

2 Origin of (In)dependent Intellectual Elites

2.1 Setup

Consider a ruler (R), whose survival depends critically on the support of a political audience (P), be it the mass population, the elite, or another key bloc in society, while P's decision to keep or remove R can be influenced by an intellectual elite (E).

State of the world. The game starts with a common knowledge that the state of the world will turn out to be either "good" or "bad" for R, i.e., $s = g$ or $s = b$, in the sense that P would find R's rule acceptable or not if P knows the state. The realization of the state follows

$$s = \begin{cases} g & \text{with probability } \theta; \\ b & \text{with probability } 1 - \theta, \end{cases} \tag{1}$$

where $\theta \in (0, 1)$ is exogenous and part of the common knowledge.

Communication. As the intellectual elite, E has her own reading of the state of the world that the others, including P, would not necessarily have, and she can communicate that to P. To capture this idea, we assume that E observes the exact realization of s, while P does not, but E can send a message, $m \in \{g, b\}$, to P. For simplicity, we assume that,

- when E observes a good state for R, i.e., $s = g$, she will always message $m = g$ to P;
- only when she observes a bad state for R, i.e., $s = b$, she will get to choose between telling the truth or lying, i.e., messaging $m = b$ or $m = g$.

Not observing the exact state of the world but receiving only E's message about it, P will process the message not too naively. For simplicity, we assume that she will do it with Bayesian updating. This concludes the first premise of our model – the "communication" premise.

Consequences. With her updated belief about the state of the world, P then gets to choose between keeping or removing R, and the game will end there. The payoffs for P and R are realized accordingly:

- R will always get 0 if being removed, and 1 if being kept;

- P's payoff depends on whether her action matches the state of the world:
  - P will get 1 if she keeps R when $s = g$, or removes R when $s = b$;
  - P will get 0 if otherwise, i.e., if she removes R when $s = g$, or keeps R when $s = b$.

(In)dependence of intellectual elites. E's payoff depends on whether or not she has always been appeasing R, i.e., whether she has messaged $m = g$ or $m = b$:

- E will get 1 if $m = g$, and $\gamma \leq 1$ if $m = b$.

The parameter γ thus indicates how much of E's status quo payoff, 1, does not depend on her having always been siding with R, i.e., is not subject to R's arbitrary power; in particular, $\gamma = 1$ would indicate an independent E, while $\gamma < 1$ a dependent E. This modeling approach to independence follows Jia et al. (2024) and Persico (Forthcoming), formalizing the neo-Roman, independence approach to liberty as in Skinner (1998, 2022, 2025): liberty is a status of independence in which one (E here) is not subject to the arbitrary power of any other person, organization, or the state (R here), and the fear of repercussion from such power is a fundamental driver in an unfree person's decision-making. This is the second premise of our model – the "independence" premise.

Choice of (in)dependent status. In reality, making someone truly independent often involves some efforts, or at least some acquiescence or merely reluctant acceptance, from the political authority with some institutional arrangements, such as promoting or respecting the rule of law, land granting with credible protection of full property rights, and making all these arrangements public, in order to solve its commitment problem (e.g., Finer, 1997; Weingast, 1997; Myerson, 2008; Fearon, 2011; Fukuyama, 2011; Pirie, 2021). To capture this idea, we assume that, given the common knowledge of θ, at the very beginning of the game and before the state of the world is realized, R gets to commit to having either an independent E, i.e., $\gamma = 1$, or a dependent E, i.e., $\gamma = \underline{\gamma} < 1$, where $\underline{\gamma}$ is exogenous, and everyone observes the decision. This commitment capacity of R makes our model an application of the Bayesian persuasion protocol in informational economics (e.g., Rayo and Segal, 2010; Kamenica and Gentzkow, 2011).

Additional payoff for E speaking the truth. In addition, we assume that E will receive an exogenous, strictly positive but small payoff, $\epsilon \in \big(0, 1 - \underline{\gamma}\big)$, if and only if her message truthfully reports the realized state of the world, i.e., $s = g$ and $m = g$, or $s = b$ and $m = b$. This additional payoff captures the idea that, in reality, for many – especially moral – reasons, everyone, including the intellectual elites, may well have an additional preference

for truth-telling or, equivalently, an additional aversion to lying that is independent of their (in)dependent status, however slight it may be (e.g., Mill, 1997; Kant, 1909; Havel, 1985).

Taking this additional payoff into consideration, E's total payoff is eventually:

- E will get $1+\epsilon$ if $s=g$ and $m=g$, 1 if $s=b$ and $m=g$, and $\gamma+\epsilon$ if $s=b$ and $m=b$.

This additional payoff thus ensures a perfectly independent E, i.e., with $\gamma=1$, would not "babble" by always messaging $m=g$ regardless of the state of the world (e.g., Crawford and Sobel, 1982), but will communicate truthfully with P when observing a bad state for R, i.e., messaging $m=b$ when $s=b$ – this treatment allows us to focus on more realistic, substantively more meaningful equilibria. Other than that, this additional payoff plays no substantial role in the model on its own, since it does not apply to R and P but only to E, and, being small, it is by itself dominated by every other payoff difference in the model.

Timing of events. Just to recap, the game flows as follows:

1. everyone knows θ;
2. R chooses $\gamma\in\{1,\underline{\gamma}\}$;
3. nature draws $s\in\{g,b\}$ with $\mathbf{P}[s=g]=\theta$;
4. observing s, E messages P with $m=g$ if $s=g$, and chooses $m\in\{g,b\}$ if $s=b$;
5. not observing s but receiving m, P chooses whether to keep R;
6. all payoffs are realized.

Complete the setup. When solving the model, we assume that everyone maximizes their own expected payoff. For simplicity, we also assume that P will keep R if indifferent.

2.2 Analysis

First, consider E's strategy when the state of the world turns out to be bad for R, i.e., when $s=b$. Telling the truth to P will give E a payoff of $\gamma+\epsilon$, where $\epsilon\in\left(0,1-\underline{\gamma}\right)$ is strictly positive but small, while lying will give her 1. For a dependent E, i.e., with $\gamma=\underline{\gamma}$, $\gamma+\epsilon=\underline{\gamma}+\epsilon<1$, so she will fear the repercussion for telling the truth and will thus lie to P, choosing $m=g$; for an independent E, i.e., with $\gamma=1$, $\gamma+\epsilon=1+\epsilon>1$, instead, so she will fear nothing and will thus tell the truth, choosing $m=b$. Recall that E will automatically message $m=g$ to P when the state of the world turns out to be good for R, i.e., when $s=g$. We thus have E's strategy as follows:

Lemma 1 (Message from intellectual elites)**.** *An independent E varies her message to P across the possible states of the world, while a dependent E does not, i.e.,*

- *when $\gamma = 1$, E will choose $m = g$ if $s = g$, and $m = b$ if $s = b$;*
- *when $\gamma = \underline{\gamma}$, E will always choose $m = g$, regardless of s.*

Understanding this, as P is processing information with Bayesian updating, she will find an independent E's message informative, and a dependent E's message uninformative and thus discard it. Given that, as she is maximizing the chance for her action to match the state of the world, P will act as follows:

Lemma 2 (Influence of intellectual elites)**.** *P follows the message from an independent E, but not a dependent E, i.e.,*

- *when $\gamma = 1$, P will keep R if $m = g$, and remove R if $m = b$;*
- *when $\gamma = \underline{\gamma}$, P will keep R if $\theta \geq 1/2$, and remove R if $\theta < 1/2$.*

Given all this, having a dependent E, i.e., choosing $\gamma = \underline{\gamma}$, will make R survive if and only if everyone thinks in the very beginning that the state of the world is more likely to be good for him, i.e., if $\theta \geq 1/2$; having an independent E, i.e., choosing $\gamma = 1$, instead, will make R survive if and only if the state of the world indeed turns out to be good for him, i.e., if $s = g$, which, when seen from ex ante, will happen with probability θ. Understanding all this, R will thus prefer an independent E, instead of a dependent E, if and only if his own survival relies on E's effective influence over P, i.e., if $\theta < 1/2$. We thus have a theory on the origin of (in)dependent intellectual elites:

Proposition 1 (Origin of (in)dependent intellectual elites)**.** *In equilibrium, R will choose an independent E if and only if his own survival relies on E's effective influence over P, i.e.,*

- *R will choose $\gamma = 1$ if $\theta < 1/2$, and $\gamma = \underline{\gamma}$ if $\theta \geq 1/2$.*

3 Persistence of (In)dependent Intellectual Elites

3.1 Setup

We now let the game in Section 2 get played repeatedly in discrete time, and introduce a subscript for the period, t, to the state of the world (s_t), the common prior that the state will turn out to be good for R (θ_t), E's (in)dependent status (γ_t), and E's message to P (m_t). We assume that each period t starts with a common knowledge of either $\theta_t = \underline{\theta}$ or

$\theta_t = \bar{\theta}$, where $\underline{\theta}$ and $\bar{\theta}$ are exogenous and satisfy $0 < \underline{\theta} < 1/2 \leq \bar{\theta} < 1$, i.e., R is relying on E's effective influence over P for his own survival, if and only if $\theta_t = \underline{\theta}$. At the end of each period t, if R is removed, he will exit the game with a zero payoff, and be replaced by a new R. We assume that everyone has an infinite horizon with a discount factor of $\rho \in (0, 1)$.

Endogenous link between periods. As legal and political historians have recognized that intellectual elites can shape the intellectual tradition of society as part of its institutional environment in the long run (afore-cited), we assume that in each period t, right after R's choice of the current (in)dependent status of E, and before nature's draw of the state of the world, E gets to choose $\theta_{t+1} \in \left\{\underline{\theta}, \bar{\theta}\right\}$, i.e., whether the R in period $t+1$ will rely on the effective influence of the E at the time over P, and everyone observes the decision. This is the third premise of our model – the "cultivation" premise. Note that θ_{t+1} is subject to E's choice – the link between periods is thus not mechanical or exogenous, but endogenous.

Permanent repercussion. As the game is now dynamic, we assume that a dependent E is not entitled to her position in the game but is subject to permanent repercussion if she moves against R, i.e., if she makes the future R more reliant on the future E's effective influence over P, or if she tells P that the current state of the world is bad for R. Formally, when $\gamma_t = \underline{\gamma}$, if E chooses $\theta_{t+1} = \underline{\theta}$, she will exit the game immediately, with a flow payoff of $\underline{\gamma}$ thereafter, and be replaced by a new E; if E chooses $m_t = b$ when observing $s_t = b$, she will exit the game immediately, with a flow payoff of $\underline{\gamma} + \epsilon$ thereafter, where $\epsilon \in \left(0, 1 - \underline{\gamma}\right)$, as in Section 2, is for her having spoken the truth in period t and is strictly positive but small, and she will be replaced by a new E. We will come back to this assumption of permanent repercussion to see its significance in our theory.

Timing of events. Just to recap, in each period t, the game flows as follows:

1. everyone knows θ_t;
2. R chooses $\gamma_t \in \{1, \underline{\gamma}\}$;
3. E chooses $\theta_{t+1} \in \left\{\underline{\theta}, \bar{\theta}\right\}$; E exits and gets replaced by a new E if $\gamma_t = \underline{\gamma}$ and $\theta_{t+1} = \underline{\theta}$;
4. nature draws $s_t \in \{g, b\}$ with $\mathbf{P}[s_t = g] = \theta_t$;
5. observing s_t, E messages P with $m_t = g$ if $s_t = g$, and chooses $m_t \in \{g, b\}$ if $s_t = b$; E exits and gets replaced by a new E if $\gamma_t = \underline{\gamma}$ and $m_t = b$;
6. not observing s_t but receiving m_t, P chooses whether to keep R; R exits and gets replaced by a new R if P removes R;

7. all payoffs are realized.

Solution concept. We consider pure-strategy Markov perfect equilibrium (MPE). To clarify the Markovian state variables, in each period t, for R who is choosing γ_t, the state of the game relevant to his payoff is characterized by θ_t; for E who is choosing θ_{t+1}, the state of the game relevant to her payoff is characterized by θ_t and γ_t; for E who is choosing m_t when seeing $s_t = b$, the state of the game relevant to her payoff is characterized by γ_t and θ_{t+1}; for P who is choosing whether to remove or keep R, the state of the game relevant to her payoff is characterized by θ_t, γ_t, m_t, and θ_{t+1}.

3.2 Analysis

It is natural to consider the following strategy profile for each period t, which replicates the equilibrium strategies in Lemmas 1, 2, and Proposition 1, plus a strategy of E that shapes R's reliance on E's effective influence in the future – in this particular strategy, an independent E will make the future R rely on such influence, while a dependent E will not:

- R will choose $\gamma_t = 1$ if $\theta_t = \underline{\theta}$, and $\gamma_t = \underline{\gamma}$ if $\theta_t = \bar{\theta}$;
- if $\gamma_t = 1$, then
  - regardless of θ_t, E will choose $\theta_{t+1} = \underline{\theta}$;
  - when observing $s_t = b$, regardless of θ_{t+1}, E will choose $m_t = b$;
  - regardless of θ_t and θ_{t+1}, P will remove R if $m_t = b$, and keep R if $m_t = g$;
- if $\gamma_t = \underline{\gamma}$, then
  - regardless of θ_t, E will choose $\theta_{t+1} = \bar{\theta}$;
  - when observing $s_t = b$, regardless of θ_{t+1}, E will choose $m_t = g$;
  - regardless of m_t and θ_{t+1}, P will keep R if $\theta_t = \bar{\theta}$, and remove R if $\theta_t = \underline{\theta}$.

Under this strategy profile, an R who relies on E's effective influence over P for his survival chooses an independent E, and such E maintains R's reliance on E's influence in the future, which will lead to an independent E in the future, and thus a persistence of both R's reliance on E's influence, and E's independent status; an R who does not rely on E's influence chooses a dependent E, instead, and such E leaves R not relying on E's influence in the future, which will lead to a dependent E in the future, and thus a persistence of both E's dependent status, and the lack of reliance of R on E's influence. If this strategy profile

constitutes an MPE, we will have a theory on the persistence of (in)dependent intellectual elites. That is exactly the case:

Proposition 2 (Persistence of (in)dependent intellectual elites)**.** *The strategy profile in consideration constitutes an MPE, under which the (in)dependent status of E persists.*

We prove Proposition 2 in Appendix A by examining all possible single deviations from the conjectured equilibrium strategy profile. To clarify the intuition, there are two steady states in the conjectured equilibrium path: one with an R who does not rely on E's effective influence over P for survival, and a dependent E who would never move against R, i.e., $(\theta_t, \gamma_t) = \left(\bar{\theta}, \underline{\gamma}\right)$; the other with an R who does rely on such influence for survival, and an independent E who would always communicate the state of the world truthfully to P, i.e., $(\theta_t, \gamma_t) = (\underline{\theta}, 1)$.

No one would like to deviate from either of these two steady states. First, for P, since whether she keeps or removes the current R does not affect the future R's reliance on E's effective influence over her, and since the conjectured equilibrium strategy for her is a best response for her in the short run, as we have shown in Lemma 2, she would not want to deviate from the strategy.

Second, starting from the steady state of $(\theta_t, \gamma_t) = \left(\bar{\theta}, \underline{\gamma}\right)$, such R, who survives for sure and does not rely on E's effective influence over P on the conjectured equilibrium path, would not want to have an independent E, since that would make E influential over P, and his own survival would become uncertain. Any dependent E would not want to move against R, either – be it about communicating to P now a state of the world bad for R, or making R rely on E's influence in the future, even though that would lead to an independent E from then on – since such a move would guarantee E's exit from the game immediately. The dependent status of E can thus persist.

Finally, starting from the steady state of $(\theta_t, \gamma_t) = (\underline{\theta}, 1)$, such R, who relies on an independent E's influence over P on the conjectured equilibrium path, would not want to have a dependent E, even though such E would lead to less reliance of the future R on E's influence. This is because a dependent E would not be able to influence P effectively, and that would guarantee R's fall immediately. Any independent E, capable of keeping R always relying on her influence and thus securing her own independence, also has no incentive to deviate from that. The independent status of E can thus persist, too.

Permanent versus temporary repercussion. The intuition behind the persistence of a dependent E involves the fact that, such E would not want to make R rely on E's influence in the future, even though that would lead to an independent E from then on, only because

she fears the immediate, yet permanent repercussion for doing so. But what is the role of such fear, exactly, and what if the repercussion may be temporary, not permanent?

Now consider such an alternative setting, in which, once a currently dependent E, i.e., with $\gamma_t = \underline{\gamma}$, chooses $\theta_{t+1} = \underline{\theta}$, then, with probability $p \in [0,1]$, she will still exit the game with a flow payoff of $\underline{\gamma}$ thereafter, i.e., suffering a permanent repercussion, as we have modeled; with probability $1-p$, instead, she will stay in the game and survive into period $t+1$, regardless of how she will eventually communicate with P in period t, and the only punishment for her is to receive eventually only $\underline{\gamma}$ in period t; the game remains unchanged for all future periods.

We relegate the detailed analysis of this alternative setting to Appendix B. In short, under this setting, staying on the formerly conjectured equilibrium path, i.e., never moving against R and, in particular, not making R rely on E's influence in the future, would make the currently dependent E survive forever, thus receiving a flow payoff of 1, but with a dependent status, so she would have to tell a lie whenever needed, thus receiving an additional payoff of $\epsilon > 0$ only when she would be able to speak the truth, i.e., when the state of the world turns out to be good for R in the current and each future period. A single deviation to make R rely on E's influence in the future right now would present E with two scenarios. In the first, permanent-repercussion scenario, which would happen with probability p, E would exit the game with a flow payoff of $\underline{\gamma} < 1$ thereafter; in the second, temporary-repercussion scenario, which would happen with probability $1-p$, E would receive only $\underline{\gamma}$ now, but would be able to always speak the truth given an independent status in all future periods, receiving a flow payoff of $1+\epsilon > 1$ thereafter.

Compared with the conjectured equilibrium path, the single deviation would thus always present a lower expected payoff in period t; for the future, it would still present a lower expected payoff in the permanent-repercussion scenario, but a higher expected payoff only in the temporary-repercussion scenario. Therefore, there exist unique thresholds $\bar{p} \in (0,1)$ and $\bar{\rho}$, such that the single deviation would not bring a gain in the long run, unless E found the permanent-repercussion scenario sufficiently unlikely, i.e., $p < \bar{p}$; even if that were the case, the long-term gain would not dominate the short-term sacrifice, unless E were sufficiently patient, i.e., $\rho > \bar{\rho}$.

The analysis thus suggests that, if E sufficiently fears the potentially permanent repercussion, i.e., $p \geq \bar{p}$, then her dependent status can persist even when she is arbitrarily close to being perfectly patient, i.e., for any $\rho \in (0,1)$; such persistence would be broken only when E were sufficiently sure that any repercussion would only be temporary, i.e., $p < \bar{p}$, provided she is sufficiently patient, i.e., $\rho > \bar{\rho}$. Therefore, in our model, persistence of E's dependent status stems from R's ability to impose not only transient but also permanent repercussion

upon a dependent E, and such E's fear of it. It is in this sense that the dependent status of E in our model is about negation of entitlement – she is not entitled to any permanent position in the game and can be removed at will for defying R – and such dependent status can persist because a dependent E fears the destruction of everything she has, including her mere position in the game, i.e., she is unfree and lacks basic human rights.

Permanent downfall versus temporary lapse. A similar point can be made about the driving force behind the persistence of an independent E. The intuition behind the persistence involves the fact that, an R who relies on E's effective influence over P would not want to have a dependent E, even though that would lead to less reliance of the future R on such influence, only because he fears his immediate downfall after doing so. But what if an action of P against R may hit R only temporarily?

Now consider such an alternative setting, in which, if P moves against such R in period t, i.e., with $\theta_t = \underline{\theta}$, then, with probability $q \in [0,1]$, R will still exit the game with a zero payoff, as we have modeled; with probability $1-q$, instead, he will still receive a zero payoff in period t, but will stay in the game and survive into period $t+1$; the game remains unchanged for all future periods.

We relegate the detailed analysis of this alternative setting to Appendix C. In short, under this alternative setting, for such R, staying on the formerly conjectured equilibrium path, i.e., choosing an independent E, would let him survive period t if the state of the world turns out to be good for him, or if the state turns out to be bad for him but he suffers only a temporary lapse; in either case, in all future periods, he will still rely on the effective influence of an independent E, so he will survive each future period if and only if the state of the world then turns out to be good for him. A single deviation to choose a dependent E right now would lead P to move against R for sure in period t, and R will survive only if the lapse is temporary; if that were the case, R would then survive for sure in all future periods, since he would not rely on E's effective influence over P and could thus make E always dependent.

Compared with the conjectured equilibrium path, the single deviation would thus bring a lower expected payoff in period t, and a lower chance to survive into period $t+1$, but a higher expected payoff thereafter. Therefore, there exist unique thresholds $\bar{q} \in (0,1)$ and $\hat{\rho} \in (0,1)$, such that the higher expected payoff in the future would not dominate the lower chance to survive into the future, even for an R who is arbitrarily close to being perfectly patient, i.e., for any $\rho \in (0,1)$, unless R were sufficiently sure that any P's action against R would only lead to a temporary lapse, i.e., $q < \bar{q}$; even if that were the case, the single deviation would not make R better off, unless she were sufficiently patient, i.e., $\rho > \hat{\rho}$. This analysis

thus suggests that the driving force behind the persistence of the independent status of E is R's primary concern being about his immediate survival, which is relying on E's effective influence over P; as a result, he would accept an independent E now, and in the future.

Uniqueness of the MPE. Since our purpose is only to provide *a* theory, not *the* theory, on the origin and persistence of (in)dependent intellectual elites, we do not need the MPE in Proposition 2 to be the unique MPE. That said, it is natural to ask whether it is. Only to answer this question, we conclude this section with the following result:

Proposition 3 (Uniqueness of the MPE)**.** *If* $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$*, then the MPE in Proposition 2 is the unique pure-strategy MPE.*

We prove Proposition 3 in Appendix D. The main steps are, first, to rule out some strategies by strict dominance and, second, to examine whether each of the remaining potential pure-strategy MPEs is indeed an MPE. A sufficient condition for the MPE in Proposition 2 to be the unique pure-strategy MPE is that the additional, strictly positive payoff for E speaking the truth is still sufficiently small – specifically, $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, which is stronger than the assumption of $0 < \epsilon < 1-\underline{\gamma}$ introduced in Section 2 – such that even the net present value of a constant flow of it would not dominate any other payoff difference in the model. This is still consistent with the fact that the additional payoff plays no substantial role in the model on its own, except for ruling out the "babbling" strategy of a perfectly independent E, as we have clarified in Section 2.

4 India from the Early to the Later Vedic Age

To illustrate the relevance and usefulness of our theory, we now turn to the very early phases of two of the oldest, most continuous cultural traditions – early India and China. In particular, I focus on the origin and persistence of the respective status of the two groups of intellectual elites that have been integral to the two venerable intellectual traditions – the brahmins in India and the mandarins in China. Guided by our theory, in both cases, I try to establish the relevant range of θ, i.e., how much the political authority relied on the intellectual elites' effective influence over the political audience for their survival, using evidence independent of γ, i.e., the degree of (in)dependence of the intellectual elites, and then examine evidence about γ as the outcome variable, and its dynamics thereafter and the mechanism behind it, operating through the maintenance of the intellectual tradition. In this sense, our historical narratives may serve as crude, yet illustrative tests of our theory. At the same time, by drawing together mainly a wide range of secondary sources structured

around our theoretical framework, these narratives may also be of interest in their own right as a synthesis of the existing historiography on the two cases, respectively. We start with the Indian case:

Rule of law and independent intellectual elites. As Pirie (2021, p. 45, 70) well attests, "Hindu law was always a religious, rather than a political, project, rooted in …the idea of cosmological order as enshrined in the wisdom of the ancient, obscure revelations of the *Veda*s," and "[t]he duty of all humans was to maintain that order," i.e., the *dharma*; as a result, "there was always a sense that the religious law transcended political power," and a Hindu king "could enact law, but he could not make it" (also Gonda, 1966, p. 17–20, 69–70). Behind such a tradition of the rule of law was the intellectual, hieratic elites of Indian society, i.e., the brahmins, who "crafted" and "continued to read and reread, copy, comment upon, and collate" their legal texts, the *Dharmaśāstra*s, "even as different kingdoms shuffled in and out of existence across the Indian subcontinent" (Pirie, 2021, p. 45, 67; Huq, 2023, p. 517; also Pirie, 2021, p. 45–70).

Notably, the brahmins, or the *brāhmaṇa*, occupied the apex position in the *varṇa* system of ancient Indian society, which is a "gradation of [religious and social] statuses," over the politically ruling class, i.e., the *kṣatriya* or *rājanya*, to which the king would in general belong, such that the brahmins "always remained the highest legal authorities, claiming that their laws should guide even the king" (Dumont, 2024, p. 227; Pirie, 2021, p. 45; also Dumont, 1998, p. 65–79; Dumont, 2024, p. 226–228). As the *varṇa* system "integrates the society in relation to its ultimate values" and "encompasses" the political order, although not absolutely impossible, it was not straightforward for the Indian rulers to subject the brahmins to their arbitrary will (Dumont, 2024, p. 227; Dumont, 1998, p. 76; also Gonda, 1966, p. 62–65; Pirie, 2021, p. 45–70). We can thus read the brahmins' apex position in ancient Indian society as them in general enjoying the independence modeled in our theoretical framework.

Formative phase of Indian culture. As Witzel (1993) states, "[t]o know the history of the brahmins means, to a large degree, knowing the history of Vedic …India." Not only is this because the inscriptions of the earlier Indus Valley civilization (c. 2500–1600 BCE) have not been deciphered yet and their influence in later Indian culture was less direct when compared with that of the later-coming Indo-Aryan-speaking peoples (e.g., Thapar, 2000c, p. 11–15; Thapar, 2002, p. 105–106; Sharma, 2005b, p. 19, 83, 91–92; Wolpert, 2009, p. 16, 22; Kulke and Rothermund, 2016, p. 10–11); it is also because deep social, economic, political, and ideological changes happened in Indian society from the Early (c. 1500–1000 BCE) to the Later Vedic age (c. 1000–600 BCE), making the transition "in many respects

the formative phase of Indian culture" (Kulke and Rothermund, 2016, p. 18; also Thapar, 2000b, p. 310). In particular, it was during this transition that the *varṇa* system took shape and the Indian tradition of the state started to emerge (e.g., Ghoshal, 1945, p. 170–171; Sharma, 1959, p. 118–128, 235–236; Sharma, 1990a, p. 83–84; Thapar, 1990, p. 14–16, 70–115; Thapar, 2000a, p. 377; Scharfe, 1989, p. 16–17; Kulke, 1992, p. 188; Witzel, 1997, p. 35, 48, 51–52; Kulke and Rothermund, 2016, p. 19–22). We thus focus on this transitional period of Indian society from the Early to the Later Vedic age.

Early Vedic society and their chiefs. In the second millennium BCE, a semi-nomadic community of people, identified with the Indo-Aryan language and calling themselves *Ārya*, migrated in waves through the mountain passes of Afghanistan into the Indian subcontinent, making the Panjab their heartland, eventually crossing the Indo–Gangetic divide, and reaching the western part of the Ganga–Yamuna Doab (e.g., Kosambi, 1975, p. 83; Thapar, 1990, p. 21–22; Thapar, 2000b, p. 312; Thapar, 2000c, p. 16–22; Thapar, 2002, p. 106–107, 111; Scharfe, 1989, p. 11–12, 15; Witzel, 1993, p. 265; Witzel, 1997, p. 30; Jha, 1998, p. 43–44; Sharma, 2005a, p. 350; Sharma, 2005b, p. 106–108; Kulke and Rothermund, 2016, p. 11–17; Davis, 2024, p. 7). The *Ṛg Veda* informs us that the Indo-Aryans at the time were predominantly pastoral, with cattle, not land, being their primary property, and they fought not only with the *dāsa*s and the *dasyu*s, who were the indigenous, pre-Aryan inhabitants, but also among themselves (e.g., Roy, 1984, p. 117; Sharma, 1990a, p. 24–30, 37–38; Sharma, 1990b, p. 12–19; Thapar, 1990, p. 24; Thapar, 2000a, p. 379–380; Thapar, 2000b, p. 312; Thapar, 2000c, p. 14, 25–27, 30, 33; Thapar, 2002, p. 112, 114–115; Witzel, 1997, p. 30; Jha, 1998, p. 44–47; Sharma, 2005a, p. 350; Sharma, 2005b, p. 108–110; Kulke and Rothermund, 2016, p. 16–17). Their social structure has been characterized as "tribal," "communal," "lineage-based," and "egalitarian," without much *varṇa* or class distinctions; many economic, social, military, and religious functions of society were exercised in various assemblies, such as the *vidatha*, *gaṇa*, *pariṣad*, *sabhā*, and *samiti*, and these assemblies "mattered a great deal in early Vedic times" (Sharma, 1959, p. 77; also p. 62–102, 235; Sharma, 1990b, p. 29; also p. 29–32; Sharma, 2005b, p. 111, 114; Thapar, 1990, p. 18; also p. 55–57; Jha, 1998, p. 48; also Thapar, 2002, p. 119–120; Sharma, 2005a, p. 105–117, 350, 356–357).[7]

In such Early Vedic society, the tribal chiefs, the *rājā*s, were not exactly kings with

[7]Such characterization is consistent with the legendary state of nature in the traditional literature – "it is clearly stated in the *Purāṇa*s that there were no *varṇa*s in the *Kṛta* age," and "[in] their account of the earliest life of mankind the Buddhist sources also do not mention the division of the people into social classes" (Sharma, 1959, p. 34); "the *Śānti Parvan* declares: …'Once there was no ruling authority, no king, no coercion and no coercer, for people took care of each other out of a sense of righteousness'" (Thapar, 1990, p. 155).

absolute power; instead, they were military "patron[s]" or "protector[s]" of the clans, *viś*, of the tribe, *jana*, and their cattle, *go*, and grazing ground, *vraja* – "[h]ence the synonyms of *gopa*, *gopati* and *janasya gopati* for the *rājā*, as against the later terms *nṛpati* and *nareśvara*," i.e., "the lord of the herd," not "the lord of men [*nṛ* or *nara*]" (Thapar, 1990, p. 24–25; also p. 26; Scharfe, 1989, p. 74, 230; also p. 34–36; also Gonda, 1966, p. 2; Jha, 1998, p. 47; Thapar, 2000a, p. 379; Thapar, 2002, p. 119–120; Sharma, 2005a, p. 185–188, 353; Sharma, 2005b, p. 110–111; Copland et al., 2012, p. 27). Their position was initially temporary, as it likely originated from the leader of the assemblies, such as the *gaṇapati*, which was not hereditary in nature; traditionally they were elected or selected from and by the *rājanya*, i.e., members of the more senior lineages among the *viś*, if not the entire *viś*, before gradually becoming hereditary over time; and the *rājā*s were "eager …to win …support" from the assemblies (Sharma, 1959, p. 111; also p. 85–91, 94–102, 124–126, 129; also Sharma, 2005a, p. 185–188, 353–354; Sharma, 2005b, p. 110–112; Thapar, 1990, p. 35; Thapar, 2000a, p. 379; Thapar, 2002, p. 119–120; Scharfe, 1989, p. 230; Scharfe, 1992, p. 313–314; Jha, 1998, p. 47–48). Although offerings called *bali* were made by the *viś* to the *rājā*, such offerings were voluntary (e.g., Sharma, 1959, p. 86–87, 109, 132; Roy, 1984, p. 123; Sharma, 1990a, p. 32; Sharma, 2005b, p. 111; Thapar, 1990, p. 124; Thapar, 2002, p. 120). The custom also maintained that, "without the consent of the *viś*," the *rājā* "cannot settle people on land" and "no land could be alienated" (Sharma, 1959, p. 131; Thapar, 1990, p. 28; also Roy, 1984, p. 122–123; Thapar, 2000c, p. 33; Thapar, 2002, p. 120).

Early brahmins. The literature indicates that, in the Early Vedic age, "the Vedic priests inspired the tribal chiefs into action and lauded their exploits in return for handsome rewards in cows and women slaves," and they "were invoked to assume the role of singers to inspire the people in the assemblies," but they had not yet constituted a separate brahmin class (Sharma, 1959, p. 73; also p. 75–78, 105; Sharma, 2005b, p. 111; also Pargiter, 1922, p. 308; Kosambi, 1965, p. 82; Witzel, 1997, p. 31; Thapar, 2000a, p. 379). On their origin, they were likely "'adepts' in matters supernatural, 'masters' of magico-religious force, wizards, medicine-men," "priests," "shamans, mantics and seers of earlier times," "the reciters of hymns and the living manuals on rituals," and "poet[s]"; notably, scholars have "argued with great force of logic" and found it "evident" that many of them were of "pre-Aryan" or "non-Aryan origin" (Pargiter, 1922, p. 308; also p. 303–321; Sharma, 1959, p. 105; also p. 120–121; Thapar, 1990, p. 52–53; Scharfe, 1989, p. 106; also Kosambi, 1965, p. 82–83; Kosambi, 1975, p. 102–107, 132–134; Sharma, 1990b, p. 22–23). Probably because of such origin, the early brahmins were "often on the tribal fringe" and "on the move," enjoying the "independence from rigid confinement within the bounds of a single tribe [and the] ability to

slip into any tribe" (Kosambi, 1975, p. 105–106, Witzel, 1993, p. 266). Consistent with our Lemmas 1 and 2, such "independence" and "flexibility" allowed them to not always attach themselves to or depend on a single tribe or chief, which made them credible "peacemaker among the nomadic tribes," i.e., effective communicators between them, and thus "useful …in the process of assimilation with minimum use of violence" (Kosambi, 1975, p. 105, 134; also p. 93, 106; Scharfe, 1989, p. 107; also p. 185; also Pargiter, 1922, p. 305; Kosambi, 1965, p. 83).[8]

Social and economic changes from the Early to the Later Vedic age. Assimilating and absorbing the indigenous tribes on the way, from the Early to the Later Vedic age, the Indo-Aryans expanded their settlement southwestward to the Upper and Middle Gangetic basins; in this process, they gradually transitioned from their earlier semi-nomadic, pastoral life to settled, cultivated agriculture, with barley and eventually rice and wheat becoming their main crops (e.g., Sharma, 1959, p. 87; Sharma, 1990a, p. 56–58, 64, 69–71; Sharma, 2005a, p. 357–358; Kosambi, 1975, p. 96–97, 107; Upadhyay, 1979, p. 1; Roy, 1984, p. 137–146; Thapar, 1990, p. 14–16, 22–26; Thapar, 2000a, p. 380, 386; Thapar, 2000b, p. 312, 314; Thapar, 2002, p. 114–116; Scharfe, 1989, p. 12–13; Kulke, 1992, p. 188–189; Witzel, 1993, p. 265; Witzel, 1997, p. 30; Jha, 1998, p. 52–55; Sharma, 2005b, p. 117–122; Kulke and Rothermund, 2016, p. 15–19). As a result, settled life started a "process of territorialisation of tribal society" among the numerous "small" and previously "very mobile" Vedic tribes, however slow that process might have been (Kulke and Rothermund, 2016, p. 22, 29; also Thapar, 1990, p. 34; Thapar, 2000b, p. 312; Kulke, 1992, p. 188–189; Rau, 1997, p. 206; Jha, 1998, p. 56–57; Sharma, 2005b, p. 121–122).

At the same time, this transition generated greater expropriable surplus, which came with a much greater degree of social stratification, and the *varṇa*s emerged as a framework "for the integration of varying sub-systems" in this newly stratified, now "fundamentally different" Vedic society (Thapar, 1990, p. 54; Kulke, 1992, p. 189; Kulke and Rothermund, 2016, p. 18). Only to capture the core structure, within the traditional lineage-based system of the Indo-Aryans, the *viś* had by this time clearly bifurcated into the junior lineages, who were still called the *viś* but later the *vaiśya*, and the senior lineages, the *rājanya*; the *rājanya* were the politically ruling class, whereas the *viś* or *vaiśya* were "subordinate" to them, as they worked on land and provided the surplus, while the *rājanya*, who were traditionally the warrior nobility riding chariots, redistributed the surplus within themselves and the priestly families, the brahmins, who now specialized in supervising rituals, and the *rājā* was selected

[8] In a later age, "[t]he exogamous basis of the *gotra* system, [which] [i]nitially …appears in more frequent association with the *brāhmaṇ*s and was to remain essential to *brāhmaṇ* identity," also "facilitated the induction of outsiders of high or appropriate status" into Vedic society (Thapar, 1990, p. 45–46).

from the *rājanya*; outside this system of "prestations and redistribution," the *śūdra*, who were "the slaves, labourers and artisans belonging to" the "subjugated" sections of both the "*Ārya*ns and pre-*Ārya*ns," were incorporated into the framework "but denied a lineage form, [with] their origin as a group …determined by occupation and locality" (Sharma, 1990b, p. 45; also p. 62–64, 67, 87–88; Thapar, 1990, p. 18, 32; also p. 18–19, 29–44, 51–52; Kulke and Rothermund, 2016, p. 19; also Kosambi, 1975, p. 99–100, 110–115, 140–141; Kulke, 1992, p. 189; Witzel, 1997, p. 36; Jha, 1998, p. 55; Thapar, 2000c, p. 37–38; Thapar, 2000a, p. 381–383; Sharma, 1990a, p. 56–58, 64, 69–71; Sharma, 2005a, p. 358; Sharma, 2005b, p. 124–128).[9]

Aspirations and challenge of the *rājā*s and *rājanya*. It was amid these social and economic changes that the *rājā*s in the many petty Vedic tribes aspired to become proper kings who held *kṣatra*, i.e., "temporal authority and power which was based less on being a successful leader in battle and more on the tangible power of laying claim to sovereignty over territory, demanding prestations and also symbolizing ownership over clan lands," "controlling people," "forcefully collect[ing] *bali*," and "making …his office …hereditary in his family" (Thapar, 1990, p. 55; also p. 48, 54–55, 61–62; Sharma, 2005b, p. 123; also p. 122–123; also Ghoshal, 1945, p. 66–67, 97; Sharma, 1959, p. 116, 119–120; Scharfe, 1989, p. 34, 74; Sharma, 1990a, p. 76–77; Sharma, 2005a, p. 188–189; Kulke, 1992, p. 189–190; Roy, 1994, p. 103–121, 158; Jha, 1998, p. 56–58; Thapar, 2000a, p. 381; Copland et al., 2012, p. 27). The *rājanya* thus aspired to maintain their position as the ruling class endowed with such authority, i.e., to become the *kṣatriya* (e.g., Thapar, 1990, 54–55; Thapar, 2000a, p. 381; Scharfe, 1989, p. 74–75).

But such aspirations were not easy to achieve. A hereditary kingly position that claimed ownership over clan lands and compulsory tax payments from the *viś* was not justified in the earlier, tribal tradition of the elected tribal leadership, deliberative assemblies, commonly owned clan lands, and voluntary offerings (e.g., Ghoshal, 1945, p. 97; Sharma, 1959, p. 48, 94–102, 120–123, 129, 131–133; Sharma, 1990a, p. 76; Thapar, 1990, p. 27–30, 35–36, 54–58; Thapar, 2000c, p. 33; Thapar, 2002, p. 120; Scharfe, 1989, p. 34, 58–60, 74–75, 230; Roy, 1994, p. 158; Kulke and Rothermund, 2016, p. 21). Not only that; "[w]ith the increasing shift to agriculture and the decreasing interest in pastoralism the role of the *rājanya*s as chariot-riding chiefs carrying out cattle raids and bringing in booty was not as conducive to producing wealth as it had been earlier," and "they came to depend more on the agricultural activities of the *viś* and the prestations which the *viś* could provide" (Thapar, 1990, p. 37;

[9]The traditional literature also links the formation of the *varṇa*s to productivity growth – in the *Purāṇa*s the four *varṇa*s were formed according to their specializations – "praying," "fighting," "producing," and "manual tasks" – only after "the means of subsistence had been provided" (Sharma, 1959, p. 36).

also p. 24–26, 31–32, 48); at the same time, the number of members of the *viś* or *vaiśya* was much greater than that of the *rājanya* or *kṣatriya* (e.g., Sharma, 1990a, p. 75; Thapar, 1990, p. 37). All this pointed to a constant challenge for the *rājā*s and the *rājanya* or *kṣatriya* to justify and maintain their ruling position in society, while the *viś* indeed "played a crucial role" in determining whether a *rājā* would maintain or lose his position, and they could "beg[in] to migrate again …to defy their subjugation by an unwanted *rājā*" (Scharfe, 1989, p. 66; Kulke, 1992, p. 191; also Ghoshal, 1945, p. 91–93; Sharma, 1990a, p. 75; Roy, 1994, p. 28, 158, 301–302; Kulke and Rothermund, 2016, p. 19–20). Such sentiment was best represented by the famous question eloquently asked in the *Śānti Parvan* of the *Mahābhārata* (12.59.6–8, Fitzgerald, 2004, p. 304):

> How is it one man stands over other men …when he has the same hands, head, and neck, the same senses? When he experiences the same pleasures and pains; has the same back, arms, and belly, same semen, bones, and marrow, the same flesh and blood; when he breathes in and out just the same? Whose life-breaths and body are the same; who experiences birth and death the same; who is the same in all the attributes of men?

Rise of the brahmins as part of a communicative solution. Such a constant challenge faced by the *rājā*s and the *rājanya* corresponds to $\theta < 1/2$ in our model, and our Proposition 1 implies that, to address the challenge, they might have needed to allow or even promote the rise of an independent intellectual elite, the brahmins, corresponding to choosing $\gamma = 1$, for their potential influence over the political audience, which included, but were not limited to, the *viś*.

Consistent with this implication, in the Later Vedic age, the *rājā*s and *rājanya* resorted to the help of the brahmins and "owed their position to" them, as the brahmins supervised elaborate public rituals, such as the sacrifices of the *rājasūya* – the *rājā*'s consecration, *vājapeya* – a chariot race, and *aśvamedha* – the horse sacrifice; in this process, the *rājā*'s position was validated and consecrated, and "the status of the *rājanya* was not only ensured but gradually raised through priestly legitimation"; notably, this was done in front of, or even enclosing, the *viś* and the *śūdra* (Thapar, 1990, p. 32; also p. 32–36, 49, 53, 59–64; Kulke and Rothermund, 2016, p. 21; also Ghoshal, 1945, p. 71–73; Sharma, 1959, p. 103–118, 121–129; Kosambi, 1965, p. 87; Gonda, 1966, p. 139; Sharma, 1990a, p. 74–75, 79–80; Sharma, 2005b, p. 123; Kosambi, 1975, p. 100, 119–123; Scharfe, 1989, p. 80–83; Kulke, 1992, p. 190–196; Roy, 1994, p. 16–22, 107–108, 158, 181, 184–192, 285; Witzel, 1997, p. 35–39, 51; Jha, 1998, p. 58; Thapar, 2000a, p. 383–384; Thapar, 2002, p. 120–122; Sharma, 2005a, p. 174–175, 359–360; Copland et al., 2012, p. 33–34; Davis, 2024, p. 7–8, 103, 108,

112–113). The brahmins also supervised the *gṛhya* – domestic – rituals, which sanctioned the "authority" of the *gṛhapati*s, who were "the patriarchal head" of the householding *viś*, to "command …both family labour and that of *śūdra*s and *dāsa*s," and the cultural identity of newly assimilated groups, while communicating the legitimizing message for the *rājā*s and *rājanya* at the same time (Thapar, 1990, p. 39; also p. 54; also Sharma, 1990a, p. 83; Roy, 1994, p. 181; Witzel, 1997, p. 38–39). As summarized by Thapar (1990, p. 54), in "both categories of [the public and domestic] rituals," the brahmins played "the political role …as a source of legitimization."

Legitimization of the newly formed social hierarchy thus penetrated systematically into both the public and domestic realms, which helped its consolidation: "by the later Vedic period kingship had been firmly established on hereditary basis"; in the now established *varṇa* system, "[t]he *rājanya* of the *Ṛg Veda* was gradually replaced by the *kṣatriya* of the later Vedic period, [and] ultimately …the *viś* [was] reduced to subordination [and] obedien[ce] to the *kṣatriya*," such that "[t]he prestations made by the *viś* to the *kṣatriya*s and the labour provided by the *śūdra*s was a sufficient basis for stratification" (Sharma, 1959, p. 48; Thapar, 1990, p. 32–33, 53; also p. 66; also Ghoshal, 1945, p. 67–71; Roy, 1994, p. 27–28, 46–52, 68–72, 75–76; Witzel, 1997, p. 35–37, 40, 48, 51–52; Thapar, 2002, p. 120–121, 128–129; Sharma, 2005a, p. 172–177, 182–183, 359–361).

Importantly, consistent with the mechanism in our Proposition 1, communication and acceptance of such a hierarchy happened exactly at the same time when the brahmins were elevated or reaffirmed with an "eminent," "enhanced," "supreme," "apex" position in the *varṇa* system (Pargiter, 1922, p. 303; Thapar, 1990, p. 66; Kulke and Rothermund, 2016, p. 19, 21; also Ghoshal, 1945, p. 72–73; Sharma, 1959, p. 127–128; Sharma, 2005a, p. 177, 360; Dumont, 2024, p. 223–224; Upadhyay, 1979, p. 7–8; Roy, 1994, p. 27–28, 46–52; Thapar, 2002, p. 128; Davis, 2024, p. 109). Their "special status [was] underlined by [their] privilege of being allowed to consume the remains of the sacrifice," and "[t]he redistribution at the sacrificial ritual became a fee for the priest"; notably, the fee, which originated from a gift or oblation of an earlier time, was not a salary or remuneration, since in the rituals the brahmin was by no means employed by the sacrificer but enjoyed an independent status (Thapar, 1990, p. 32, 53; also p. 49, 64; also Heesterman, 1959, p. 241; Thapar, 1978, p. 105–116; Thapar, 2000a, p. 384–385; Thapar, 2002, p. 118–119, 128; Sharma, 1990a, p. 31, 78–79, 84). It is maybe equally important to note that, as the warrior class, the *rājā* and the *rājanya* or *kṣatriya* did have and probably even "monopol[ized]" the capacity to coerce the brahmins into a dependent status – in the society of most of the Later Vedic age the "use of iron [was] minimal [and] almost restricted to weapons," which "were limited in number and probably lay in the sole possession of chiefs and princes" – but they chose not to do so

(Sharma, 1990a, p. 60; also p. 59–61, 77; Thapar, 1990, p. 22, 68; also Thapar, 2000a, p. 381; Sharma, 2005a, p. 178; Sharma, 2005b, p. 119–120; Kulke and Rothermund, 2016, p. 18). This implies a real reliance of the *rājā* and the *rājanya* or *kṣatriya* on the brahmins' effective influence over the political audience in the process.

The role of such a position of the brahmins in the *varṇa* system, especially relative to the *rājā* and, by extension, the *rājanya* or *kṣatriya*, in such a communicative process toward the *viś*, was probably best attested in two famous details of the *rājasūya* sacrifice – the *rājā*'s consecration – among many others. The one is that, in the *ratnahavīṃṣi* ceremony, i.e., "offerings to the precious (power)," the *rājā* would visit in a specific order the house of each of a dozen *ratnin*s, i.e., the "givers and takers of royal power" or "of the kingdom," and offer them oblations; on various ordered lists of such *ratnin*s, the *brāhmaṇa* or the *purohita*, i.e., "the one placed in front" – the chief priest, "represent[ing] the newly organized priestly class" of the brahmins, almost always ranked very first and was always immediately followed by the *rājanya* or the *rājā* himself, "represent[ing] the warrior class of the *kṣatriya*s"; at the same time, the *grāmaṇī* or *vaiśya-grāmaṇī*, "represent[ing] the *viś* or the village, the headship of which he enjoyed," was always present while placed in the bottom half of the list (Sharma, 1959, p. 105, 113; also p. 103–118; Kulke and Rothermund, 2016, p. 22; also p. 21–22; also Thapar, 1990, p. 59; Scharfe, 1989, p. 231). In this scene, the preeminent position of the brahmins in the social hierarchy was thus reaffirmed exactly when the *viś* was communicated with the message legitimizing the warriors' rule over them.

The other – probably more theatrical – detail is that, at the end of the *devasūhavīṃṣi* ceremony, i.e., offerings to the divine quickeners, and right before the preparation for the anointing of the *rājā*, in front of the *viś*, the supervising brahmin would communicate a clear message to them as the political audience in our theoretical framework: he would present the sacrificer to *them*, call him by *their* name, and proclaim him *their rājā*, while reaffirming the brahmins' own independence and exempting themselves – the brahmins – from the *rājā*'s authority immediately after – for example, for the *Bharata*s, the brahmin would pronounce:

> [H]im, the son …of the *Bharata*s, …this man, O ye *Bharata*s, is your king, *Soma* is the king of us *Brāhmaṇa*s!

Here the *Śatapatha Brāhmaṇa* (5.3.3.12, Eggeling, 1894, p. 72) explains that the supervising brahmin "thereby causes everything here to be food for him (the king); the *Brāhmaṇa* alone he excepts: therefore the *Brāhmaṇa* is not to be fed upon, for he has *Soma* [i.e., the deity of the sacred ritual drink, *soma*] for his king" (also Ghoshal, 1945, p. 145–146; Sharma, 1959, p. 120–121, 129; Dumont, 2024, p. 224; Thapar, 1990, p. 61; Roy, 1994, p. 147, 181).[10] The

[10]We adopt the traditional reading of the passage (e.g., Weber, 1893, p. 31; Lommel, 1955, p. 203).

close juxtaposition of the two statements – the one proclaiming the sacrificer the *rājā*, the other reaffirming the brahmins' independence – and the fact that it was to the *viś* that both these statements were pronounced suggest that the independent status of the brahmins was a critical part of the communicative solution to the challenge the *rājā* and the *rājanya* or *kṣatriya* faced, in order to justify and maintain their ruling position over the *viś*.

Intellectual tradition preserved and cultivated, and independence as a steady state. Our Proposition 2 suggests that such independent status of the brahmins in the Later Vedic age would allow them to preserve and cultivate an intellectual tradition as part of an institutional environment that would facilitate a continuing reliance of the *rājā* and the *rājanya* or *kṣatriya* on them, which would make the brahmins' apex position in the *varṇa* system a steady state.

Indeed, the *Veda*s, which were probably the most important carriers of the intellectual tradition at the time, "were transmitted orally from one generation of Brahmin priests to another," which "gave the priests a monopoly of the book deliberately kept unwritten" and thus allowed them to influence not only current but also future politics (Kosambi, 1975, p. 87; also p. 86–87; Jha, 1998, p. 43; also p. 60–61; also Kulke and Rothermund, 2016, p. 15; Witzel, 1997, p. 40–41; Thapar, 2002, p. 111; Davis, 2024, p. 109–113). In terms of the content of the intellectual tradition preserved and cultivated, from an emerging idea in a late hymn in the *Ṛg Veda* to a general theme of the later Vedic corpus, the *Veda*s and the early legal texts, such as the *Dharmasūtra*s, had begun to justify and ensure not only "the observance of *varṇa* rules" but also "the position of the Brahmin priests at the apex of the social hierarchy," reaffirming repeatedly the "important privileges to the *brāhmaṇa*s," such as "exemption from physical torture, and the right to honour and gifts," which started a trend toward codifying the preservation of the *varṇa* system into law in post-Vedic times (Sharma, 1959, p. 145; also p. 43–46, 143–145, 183–201, 236; Thapar, 1990, p. 54; also p. 127–129; Kulke and Rothermund, 2016, p. 19; also Thapar, 1975, p. 123–124; Upadhyay, 1979, p. 6–9; Scharfe, 1989, p. 16–17, 40; Roy, 1994, p. 126; Sharma, 2005b, p. 167–168; Davis, 2024, p. 113). In particular, in the Later Vedic period, the famous notion in ancient Indian society began to emerge that one of the most essential duties of the *rājā* was to uphold

Heesterman (1957, p. 77–78; also p. 75–78) reads the text alternatively as "imply[ing] the glorification of the royal sacrificer …, [f]ar from …document[ing] the brahmins' supposed independence from or even superiority over the king," and Scharfe (1989, p. 82, 101–106) follows this reading. That said, Sharma (1959, p. 121) responds to this alternative reading as follows: "[t]he theory that *Soma* is identical with the king and consequently the crucial passage does not refer to the special position of the *brāhmaṇa*s has hardly any basis in facts, for there are several other passages which indicate the privileged status of the *brāhmaṇa*s. In view of the clear statement of the *Śatapatha Brāhmaṇa* that the *brāhmaṇa* is not to be lived upon by the king it would be wrong to think that the passage implies the glorification of the royal sacrificer and not the independence of the *brāhmaṇa*."

the *varṇa* system as an integral part of the *dharma*, which would "continue to persist till medieval times"; meanwhile, the intellectual tradition maintained that any hostility to the brahmins would be "self-destructive" to the *rājā*, and the brahmins must "retain …a certain control" to define what was legitimate or not (Sharma, 1959, p. 44; Roy, 1994, p. 145, 154; also p. 133–157, 211–241, 291–295; also Ghoshal, 1945, p. 64, 93–94, 148; Gonda, 1966, p. 66–67; Sharma, 1990a, p. 81–82). Such an intellectual tradition made the *rājā* and the *rājanya* or *kṣatriya* continue to be "dependent on priestly support" (Roy, 1994, p. 143; also Kulke and Rothermund, 2016, p. 21).

In our theoretical framework, this situation corresponds to an independent intellectual elite today, with $\gamma_t = 1$, shaping the future ruler's reliance on an independent intellectual elite to be kept at a high level, i.e., $\theta_{t+1} = \underline{\theta} < 1/2$, which is consistent with our Proposition 2. Consistent with the logic of our Propositions 1 and 2, the *rājā* and the *rājanya* or *kṣatriya* were not totally happy about such an intellectual tradition being preserved and cultivated, and in cases they indeed "tried to assert [their] control over the priesthood" or to break away from the *brāhmaṇ*ical tradition (Roy, 1994, p. 143; also p. 150–151; also Sharma, 1990a, p. 80–82). But still, "the *rājā* on his part rarely attempted to pull down what was a convenient facade for his growing power," i.e., the preeminent position of the brahmins in the *varṇa* system, since "[f]or the *rājā*, …it was preferable to have the *brāhmaṇa*s as allies rather than as antagonists, as the priests had access to communication networks not only with the gods, but with men as well" (Roy, 1994, p. 151; also p. 191–210, 297–300). The independent status of the brahmins was thus accepted as a steady state, i.e., $\gamma_{t+1} = 1$, by the ruling class, because of their reliance on the brahmins' effective influence over the political audience, in order to maintain their ruling position in society, which is consistent with the implication and mechanism of our Proposition 2.

Indeed, it has become a formula for ancient Indian society that "the king depends on the priests for the religious functions, he cannot himself operate the sacrifice on behalf of the kingdom, he cannot be his own sacrificer, instead he 'puts in front' of himself a priest, the *purohita*, and then he loses the hierarchical preeminence in favour of the priests, retaining for himself power only" (Dumont, 2024, p. 227). This formula has proved to be remarkably stable "from the time of the *Brāhmaṇa*s until our days," surviving the great empires, numerous regional kingdoms, and foreign rules while reaching further into the east and south, as "the brahmin stands supreme …[i]n Hindu society, …superior even to the king, [and] he represents the model that the others strive to imitate," while "the king ha[s] [not] arrogated anything belonging to the *Brāhmaṇ*" (Heesterman, 1985, p. 26; Dumont, 2024, p. 228; also Witzel, 1993, p. 267; Witzel, 1997, p. 34, 51–52; Pirie, 2021, p. 45–70; Kulke and Rothermund, 2016, p. 319). But how could a brahmin – at least "the ideal brahmin"

– be so influential in politics and society (Heesterman, 1985, p. 43)? As implied by our Lemmas 1 and 2, it could be based on his potential to be independent when he acts and communicates with the political audience, which is contained in the Vedic tradition, as we have just discussed.

5 China from the Late Shang to the Western Zhou Era

For a comparison with the Indian case, we now turn to early China:

Rule by law and absence of independent intellectual elites. As legal and political historians have noted, as "a unique achievement among the world's major legal traditions," in ancient China, "the emperors resisted the 'rule of law', the possibility that they could be judged according to their own laws" (Pirie, 2021, p. 96). Instead, a tradition of rule by law was formed, according to which "there was no concept of law that could override a monarch's own decisions …and no sanctions existed which could limit the power of the ruler" (Loewe, 1999, p. 1004) – simply put, the ruler "was the source of all law" and "was not constrained by it" (Pirie, 2021, p. 96). Behind this unique legal tradition was another equally unique socio-political tradition: there was a prominent absence of a powerful class of intellectual elites in ancient China, hieratic or not, that were not subordinate to the political authority and ruler, but independent (e.g., Chang, 1983, p. 122–125; Gernet, 1996, p. 28–29; Shao, 2013b, p. 35; Pirie, 2021, p. 71–96; Huq, 2023, p. 522–526; Yan, 1996, p. 472–478, 491–494; Yan, 2024a, p. 9–23; Yan, 2024b, p. 68–79; Xu, 2025, p. 127–128, 163–201).

Constitutive period of Chinese civilization. To understand the origin and persistence of these traditions, we must return to the "constitutive period" of Chinese civilization, i.e., the period from the pre-historic era to the Zhou dynasty (c. 1046–256 BCE) (Finer, 1997, p. 444). In particular, the transition from the Late Shang (c. 1250–c. 1046 BCE) to the Western Zhou era (c. 1046–771 BCE) is of our prime interest, since the Late Shang period is the earliest period for which deciphered contemporaneous inscriptions are available, with earlier periods known only from archaeological records (e.g., Campbell, 2018, p. 1), whereas the following Western Zhou period witnessed the formation of the basic structure and legitimacy theory of the later Chinese state (e.g., Hsu, 2018; Li, 2008).[11]

[11]For general references on the archaeology of and early state formation in pre-historic China, see Chang (1986), Liu (2005), and Liu and Chen (2012); on the Shang dynasty, see Chang (1980). For an earlier work on the statecraft in the Western Zhou era, see Creel (1970). For the continuity in the structures of the imperial and modern Chinese states, see Xu (2011, 2025).

Kings and intellectual elites in very early Chinese society. When examining the socio-political development of Chinese society in this period, our theoretical framework points our attention to the power structure of society and, in particular, the different roles that the ruler and the intellectual elites assumed. For pre-historic China, the *Discourses of Chu* 楚語 of the *Discourses of the States* 國語 records a legend that there was an early period when the Chinese kings, *wang* 王, as the political and military leader, did not hold the supreme religious power, until Zhuanxu 顓頊, a mythological emperor traditionally put at the 26th–25th centuries BCE, "severed the communication between the earth and heaven [絕地天通]," thereby monopolizing access to religious power; notably, the action was implemented by Chong 重 and Li 黎, likely representatives of intellectual elites who had religious and astronomical expertise at the time, and they did it following Zhuanxu's order (Chen, 2013, p. 620–626; also Waley, 1955, p. 9–10; Xu, 1960, p. 74–87; Yang, 1962, p. 163–164; Chang, 1983, p. 44–45; Xu, 2006, p. 29–41).[12] This legend suggests that the tradition of Chinese intellectual elites being subordinate to the political authority could possibly be traced back to the pre-historic time.

Coming to the Late Shang period, the dominant power in North China was the Shang people, with their great capital located near present-day Anyang in northern Henan (e.g., Chang, 1980, p. 69–73; Li, 2008, p. 30). Based on archaeology, contemporaneous inscriptions, and later texts, scholars have understood that, given the military, coercive nature of the lineage organization, *zu* 族, the Shang king, as the head of the royal lineage and thus the head of the lineage-organized Shang people, was simultaneously the chief commander and chief priest, presiding over a vast kinship-state structure, occupying the center of a centripetal economy, and monopolizing access to the supernatural in a belief and ritual system emphasizing ancestral worship (e.g., Chen, 1956, p. 202, 365, 580–581; Chen, 2016, p. 90–92; Gernet, 1968, p. 63–65; Gernet, 1996, p. 22; Keightley, 1978a, p. 212–213; Keightley, 1999, p. 245, 289–290; Chang, 1980, p. 158, 163, 200; Chang, 1983, p. 8, 35–37, 45–47; Hsu, 2018, p. 44; Zhu, 2004, p. 28, 149, 160–163, 178, 211; Song and Liu, 2006, p. 277–284; Li, 2013, p. 93–95, 100–102; Campbell, 2018, p. 3–4, 142–144; Pirie, 2021, p. 72).

Assisting "the personal rule of the Shang king" and, importantly, "little more than his personal attendants" and "subordinates and subjects," was a class of religious officials, such as the Diviners 卜, Inquirers 貞, and Priests 巫 (Li, 2013, p. 106; Shao, 2013b, p. 34; also Chen, 2016, p. 91; Chen, 1956, p. 202; Chang, 1980, p. 192; Chang, 1983, p. 45–47, 51–54; Keightley, 1999, p. 237; Song and Liu, 2006, p. 264–275). They "played a very central

[12]Consistent with the legend, archaeological evidence suggests that "[i]n Neolithic China cosmological power was not centralized" (Liu, 2005, p. 157). For some reflections of a tradition of decentralized religious power in the Chu 楚 area, centered around nowadays Hubei and southern Henan, see Shao (2013b).

role and formed the main body of the Shang government," whereas "specific administrative offices had not been differentiated in the Shang government or separated from the religious roles of the royal diviners who staffed the royal court and transmitted royal commands to the targeted groups of officials" (Li, 2008, p. 28–29; also Keightley, 1978a, 214–220; Keightley, 1983, p. 548–558; Keightley, 1998, p. 801–828; Keightley, 1999, p. 286–291; Chang, 1980, p. 192–194; Chang, 1983, p. 44–55). These religious officials, together with other scribal officials, such as the Document Makers 乍（作）冊, managed and had access to the divinatory inscriptions, which are "the most ancient forms of the Chinese written characters" and "constitute the oldest form of historiography in China" (Gernet, 1996, p. 45–46; also Keightley, 1978b, p. 45; Chang, 1983, p. 86–94; Hsu, 2018, p. 49; Finer, 1997, p. 447; Song and Liu, 2006, p. 264–275; Li, 2008, p. 24–30; Li, 2013, p. 106–107; Xu, 2021, p. 95–116).[13] At a time when "[p]ossession of knowledge of the past could actually be equated to literacy, and access or nonaccess to the written record was the key to predictive power in the ancient art of governance" (Chang, 1983, p. 89), they were the intellectual elites at this early time of Chinese history, and they were dependent on the ruler.

Rise of the Zhou and their conquest of the Shang. During the middle of the Late Shang period, "a small community among many others on the western edge of the Shang state," the Zhou people, from their center in nowadays western Shaanxi, "secretly expanded their influence over communities in the adjacent areas and undermined Shang authority in the west" (Li, 2008, p. 30). After a series of strategic preparations, when King Wu 武王 succeeded his father, King Wen 文王, as the Zhou king (c. 1049 BCE), the Zhou's sphere of influence and strategic allies had slowly but eventually encircled the Shang's core area from three directions – the west, north, and south (Hsu, 2018, p. 102–108). Although the Zhou still had weaker manpower and its economic productivity and military strength were not much advantaged, if not disadvantaged, when compared with the Shang (e.g., Creel, 1970, p. 97; Hsu, 2018, p. 92–102), in c. 1046 BCE, King Wu led an allied force of the Zhou and a few other peoples to a decisive victory over the Shang army near the Shang's provisional capital, Zhaoge 朝歌, also in present-day northern Henan; within a day Zhaoge was taken and the last Shang king committed suicide – thereby ended the Shang dynasty (e.g., Hsu, 2018, p. 108–114; Finer, 1997, p. 448; Yang, 2003, p. 92–105; Li, 2008, p. 31).

[13]Chen (2016, p. 91) famously attributes the origin of the scribal officials in the Shang era to early shamans or priests 巫; Xu (2006, p. 7–29) emphasizes a subgroup of them, i.e., those who had astronomical knowledge, and adds the visually impaired 瞽, some of whom were early meteorologists, instrumentalists, or vocalists – all instrumental in formulating calendars and preserving traditions for society – when identifying the prototypes of the scribal officials; Yan (2001a), instead, sees the musical officials 樂師 as a tradition complementary to yet separate from the tradition of the scribal officials.

From initial crisis to historical challenge of control. Following such an unexpectedly swift victory, the Zhou's control of the Shang remnants and formerly the Shang's realm proved to be precarious (e.g., Creel, 1970, p. 85–86; Hsu, 2018, p. 134–138; Shaughnessy, 1999, p. 310–311; Yang, 2003, p. 136–151; Li, 2008, p. 31). As succinctly summarized by Li (2013, p. 121), "King Wu adopted a temporary occupation policy by stationing two of his brothers near the Shang capital, and the conquered Shang people were placed under Wugeng [武庚], a son of the last Shang king, as their nominal ruler. The main body of the Zhou army returned west with the king. When King Wu died in 1043 BC, only two years after the conquest, and when the Duke of Zhou [Dan 周公旦, another brother of King Wu] became the de facto leader at the Zhou court, his two older brothers, joined by Wugeng and his former Shang subjects on the eastern plains, rose in a total rebellion against the Zhou court in the west."

The great rebellion was eventually suppressed by a three-year effort, jointly led by the Duke of Zhou and his half-brother, Duke Shi of Shao 召公奭; as a result, the entire eastern area of North China, and all the various peoples there, were brought under the Zhou rule (e.g., Shaughnessy, 1999, p. 311; Yang, 2003, p. 151–157; Li, 2008, p. 31; Li, 2013, p. 121–123). Now, the Zhou court faced an even more staggering – indeed, historical – challenge of maintaining legitimate control over a realm that was unprecedentedly vast and diverse – actually, this was the earliest time, to our current knowledge, when the term "China," meaning the Central Realm 中或（域、國）, appeared in contemporaneous inscriptions (e.g., Hsu, 2018, p. 114; Ma, 2013, p. 119, 124) – not to mention the uncooperative, if not outright hostile, populace (e.g., Creel, 1970, p. 69, 97; Bagley, 1999, p. 229–231).

As Creel (1970, p. 97) sees, for the Zhou court, "with no decisively superior military techniques or weapons, and relatively little political experience, the prospect of bringing such an area under real control was far from bright." Our Proposition 1 suggests that, if the Zhou court could not address the challenge by their own means, which corresponds to $\theta < 1/2$ in our model, they might have had to promote an independent class of intellectual elites, or at least allow such a class to rise, which corresponds to choosing $\gamma = 1$, hoping for their effective communication over the political audience, i.e., the Shang remnants and the other ruled peoples, to help to secure the Zhou rule; our Proposition 2 suggests that, if that happened, such independent status of intellectual elites could have then persisted as a steady state in equilibrium. We can thus view this very moment of the challenge of control as a critical juncture in Chinese history – it may have been a real opportunity for an independent class of intellectual elites to emerge, and possibly become a tradition, in Chinese society.

Mandate of Heaven. The Zhou court did come up with a holistic approach to the challenge, a few features of which would prove to be foundational to the later Chinese state. On the ideological front, they created a discourse about the divine Heaven, *Tian* 天, on which the Zhou people, not the Shang, had been placing significant emphasis in their belief system, trusting a people and, in particular, their ruler, with the Mandate, *Ming* 命, of Heaven, to rule all the peoples under Heaven, i.e., in the realm for the Zhou to control, while reserving the right to withdraw it, according to the virtues or misdeeds of the ruler (e.g., Fu, 2018, p. 101–113; Chen, 1956, p. 580–581; Chang, 2013, p. 425–432; Creel, 1970, p. 44; Keightley, 1978a, p. 212–213; Keightley, 1999, p. 252–253; Hsu, 2018, p. 114–125; Finer, 1997, p. 449; Zhu, 2022b, p. 1103–1115; Li, 2013, p. 99; Didier, 2009b, p. 21–22, 26–27).[14] In this discourse, transmission of the Mandate of Heaven follows a pattern of dynastic succession: the Xia, the people that was believed to have dominated the realm before the Shang did, lost the Mandate because of the misrule by their last king; the Shang received the Mandate because of the virtues of their first king, but eventually lost it because of the misrule by their last king, too; King Wen of Zhou has been trusted with the Mandate because of his virtues, but Heaven may withdraw it, still, if he or any future Zhou kings mistreat the peoples in the realm (e.g., Creel, 1970, p. 82–84; Hsu, 2018, p. 117–124).[15] Although the doctrine of the Mandate of Heaven would eventually become "the cornerstone of the ideology of the Chinese state, …persist[ing] into the twentieth century" and arguably even today (Creel, 1970, p. 44, 82, also p. 93–94; also Hsu, 2018, p. 124–125; Zhao, 2009), the primary, imminent goal of this discourse, especially in the form of dynastic succession, was to persuade the Shang remnants to accept the Zhou rule – as Creel (1970, p. 84) notices, in the earliest literature,

[14]On the nature of the celestial deities of the Shang people, that of those of the Zhou people, and their relationship, Fu (2018, p. 101–113), Creel (1970, p. 493–506), and Hsu (2018, p. 114–125) argue that the Zhou borrowed the Shang's (High) Deity, (*Shang*) *Di* （上）帝, and combined it with Heaven, on which the Zhou people had been placing great emphasis in their own belief system, thus transforming the Shang's Deity into a Deity that was now residing in Heaven and thus inclusively for all the peoples under Heaven, i.e., in the realm, and this Deity gave and took the Mandate of Heaven. Zhu (2022a, p. 102–103; 2022b) admits that Heaven was primarily a Zhou concept, which was, in turn, probably a result of influence from Altaic-speaking peoples, while he argues that the Zhou people did not borrow from the Shang people but had their own concept of Deity, which was a more encompassing deity than the Shang's Deity; that said, the Zhou's Deity and Heaven had virtually the same power and function in the giving and taking of the Mandate of Heaven. Didier (2009a, p. 128–165; 2009b, p. 1–14, 21–27) argue that the Zhou's Heaven and Deity and the Shang's Deity and High Deity were largely counterparts, and there might also have been a counterpart of the theory of the Mandate of Heaven in the Shang's belief system, but the phrase was not explicitly expressed or even implied, and in the Zhou's belief system Heaven was more inclusive and encompassing than Deity. We adopt the consensus view emerging from these three accounts: the ideological emphasis on Heaven was distinctively of the Zhou people, and the Zhou's Heaven and Deity can be viewed as a binity in their giving and taking of the Mandate of Heaven. For a survey on the nature of the celestial deities of the Shang people, see Song and Liu (2006, p. 293–301).

[15]For reconstructing the background of existing historical and geographical knowledge at the time behind the formation of the discourse, see, for example, Shao (2013a) and Li (2017, p. 307; 2018b, p. 363–365).

such transmission of the Mandate of Heaven from the Xia to Shang and then to Zhou is invoked only in three speeches, all made by the Duke of Zhou to the Shang remnants, or former subjects of the Shang rule, after their failed rebellion (also Yang, 2003, p. 161–163).[16]

As this discourse was worked out by the Zhou court – primarily the Duke of Zhou – rather than someone independent of the Zhou authority, our Lemma 2 suggests that it would not be too persuasive, at least on its own; after all, it was "propaganda" from the Zhou court (Creel, 1970, p. 84) and, seriously, what alternative message would one expect the Duke of Zhou to talk about – to denounce his and his people's own rule? Not only that; as Finer (1997, p. 449) notes, in this discourse, "[t]he proof that Heaven had withdrawn its mandate was the overthrow of a ruler," so the discourse is essentially "a curiously simplistic piece of circular thinking" – "rebellion was justified – provided it succeeded." Also, as analyzed by Creel (1970, p. 85), "[t]he Shang were a people who had long had a complex and sophisticated culture, [and] they must have had their own political ideology, settled and firmly established. The Chou were, from the Shang point of view, 'rustics' if not barbarians. …Their accusations against the last Shang King appear to have been …demonstrably false. And the Chou said that they had been commanded to kill the Shang ruler and seize his territories by Heaven – a deity apparently peculiar to the Chou and alien to the Shang. How could the Shang be expected to accept all this, which must have appeared to them to be nonsense?"

Western Zhou state. Clearly the Zhou court understood all this, as they also started, besides the ideological innovation of the Mandate of Heaven, building a specific state structure, i.e., a "delegatory kin-ordered settlement state," as coined by Li (2008, p. 23). In this structure, the Zhou king set up regional states and delegated his authority to the regional rulers, such that they "had the full rights of a ruler in their own territories"; as a result, "[t]he regional governments …replicated the roles of …the central government" in each regional state (Li, 2008, p. 22–23; also p. 303). At the same time, such a *delegatory* relationship maintained that these regional rulers "did not actually possess the source of the political authority," as "the authority was not permanently granted" but "could be confiscated by the king, as happened in a number of actual cases"; as a result, "[t]he relationship between the Zhou king and the various regional rulers …was a 'ruler–subject relationship' that de-

[16]The three speeches Creel (1970, p. 84) cites are *The Announcement of the Duke of Shao* 召誥, *The Many Officers* 多士, and *The Numerous Regions* 多方 in the *Book of Documents* 書. A complication of reading exists around the first speech: the English translation by Karlgren (1950, p. 47–51), which Creel (1970, p. 84) adopts, reads it as made by the Duke of Zhou to the Shang remnants; the modern Chinese translation by Chü (2011, p. 97–102) reads it as to the Shang remnants, too, but made by the Duke of Shao; the English translation by Legge and Waltham (1971, p. 161–166) reads it also as made by the Duke of Shao, but to the Duke of Zhou. No such complications exist around the other two speeches; Yang (2003, p. 161–163) focuses on those two in his analysis.

manded the unconditional submission of the latter to the former," so that these regional states "were not independent 'kingdoms'" but "performed the …tasks charged by" the king, such as "hold[ing] their territories and defend[ing] the Zhou state against foreign enemies," whereas the king always had the authority to tend to affairs within the regional states (Li, 2008, p. 23, 246, 290, 294; also p. 247, 303; also Li, 2003; Creel, 1970, p. 99, 414; Zhu, 2004, p. 239).[17] Such an arrangement of political authority was based upon the order of authority along the lineage-ordered *kinship* structure among the Zhou people, the so-called "Lineage Law 宗法": as in general the head of a sub-branch 小宗 of the Zhou royal lineage, any regional ruler was "required to submit to" the authority of the Zhou king, who headed the primary line 大宗 of the royal lineage (Li, 2008, p. 248; also p. 296).[18] From there, in the same way along the kinship structure, a hierarchical network of control would extend to the subject population who lived on the local *settlements* 邑, in different but all parts of the realm; as a result, "[i]n the Western Zhou sources, there is no evidence for the existence of a free citizen body outside the structure of lineages," and "no settlement was independent (like the city-state)" (Li, 2008, p. 287, 304; also p. 22–23, 294, 296–297, 299, 303; also Finer, 1997, p. 448).[19] As such, this state structure has contained the fundamentals of the later and even current Chinese state – regionally decentralized, but has the potential to be directly administered, by the ruler; authoritarian, if not fully totalitarian yet; and illiberal (e.g., Xu, 2011, 2025; Yan, 2024a,b; Qin, 2025).[20]

[17]As Li (2008, p. 247) testifies, "[t]his does not mean that the Zhou king could always do so, [i.e., to enforce the unconditional submission by imposing punishment over disobedient regional rulers], certainly not for the most part of the middle and late Western Zhou when the royal power declined in the face of a rising regionalism. But he could legitimately do so when he was strong."

[18]On the Lineage Law and its tradition among the Zhou people, in particular the "absolute submission" of a sub-branch to its parental primary line (Zhu, 2004, p. 322), in political, economic, military, and religious affairs, see, for example, Zhu (2004, p. 234–235, 297–302, 309–314, 321–322, 373, 553), Wu (1990, p. 59), and von Falkenhausen (2006, p. 66, 69); on a similar tradition among the Shang people, see Zhu (2004, p. 88–89, 163–165, 185–187, 196–208, 177, 211), Chang (2013, p. 422), and Campbell (2018, p. 163).

[19]On the lineage-ordered kinship structure as the social foundation of the Shang rule, see, for example, Finer (1997, p. 447) and Campbell (2018, p. 177, 211); on the continuity of this point from the pre-historic period to the Zhou rule, see Chang (2013, p. 19–21, 488); on the military settlement state as a strategy to control remnants of defeated people from the Shang to Zhou times, see Li (2017, p. 300).

[20]In this structure of the Western Zhou state, the sub-national governments – the regional states in this case – were set up *regionally* as replications of the central government – not functionally specialized; they were not federated or even feudal states – their authority was not endowed or even granted, but only delegated from and by the central government, such that the central government could *administer* the whole realm in a *decentralized* way, or directly, as it wished; the whole purpose of the arrangement was to secure control on behalf of the central government, so the nature of the state was *authoritarian* – not democratic – if not fully *totalitarian* yet; such control was achieved through a series of dependent, submissive relationships – according to the Lineage Law along the kinship structure in this case – with the state and, ultimately, the ruler at the top, so the state was methodologically and structurally against personal and organizational independence from the state and the ruler, i.e., *illiberal*. All these features have proved to be fundamental to the later and even current Chinese state: for example, Xu (2011) coins the term "regionally decentralized authoritarian state" to describe the Chinese communist state and shows its continuity from the

Other arrangements. The Zhou court complemented their ideological and institutional efforts with a few other political-geographical, military, and policy arrangements. They built a new, eastern capital, Luoyi 洛邑, near present-day Luoyang in Henan, and stationed half of its armies there, so as to better control the eastern area of the realm and deter any further rebellions of the Shang remnants, while keeping the rest of its armies still in the area of its original, western capital, Feng–Hao 豐鎬, near present-day Xi'an in Shaanxi, thus forming a political-strategic structure with two centers (e.g., Creel, 1970, p. 84, 90–91; Hsu, 2018, p. 138–139; Yang, 2003, p. 161–165; Li, 2008, p. 33).[21] Under direct surveillance of the Zhou people, many Shang remnants were also forced to migrate, sometimes repeatedly, from their accustomed homes to new, unfamiliar areas, with their morale crushed and many of their traditions dispersed during the process (e.g., Creel, 1970, p. 86–93; Hsu, 2018, p. 129–134; Yang, 2003, p. 158–161; Zhu, 2004, p. 274–276). At the same time, many Shang remnant elites were recruited into the Zhou state, as part of a greater program to assimilate and integrate the Shang remnants, and other peoples, into the Zhou people, thus forming a multi-ethnic, multi-cultured populace with the Zhou people as the core (e.g., Hsu, 2018, p. 138–158; Yang, 2003, p. 165–168; Zhu, 2004, p. 259–286).

Little demand for independent intellectual elites, and thus their dependence. Such a holistic approach adopted by the Zhou court effectively "made further revolt impracticable" for the Shang remnants (Creel, 1970, p. 86). At the same time, "the Chou theory of the Mandate of Heaven appears to have become completely and, insofar as we can tell, almost immediately prevalent" (Creel, 1970, p. 86) – regardless of whether or not the theory was wholeheartedly accepted, its prevalence would make it extremely difficult for the subject population to coordinate among themselves for a rebellion. In our theoretical framework, the holistic approach the Zhou court adopted would thus alleviate their need for the effective influence of a potentially independent class of intellectual elites over the

imperial Chinese state; Xu (2025) updates the concept by viewing it as a temporary, limited deviation from the "regionally administered totalitarian state" during the Chinese communist rule in general, which, as a totalitarian rule, does not recognize liberty, in the sense of independence from the state, as a basic human right; Yan (2024a,b) persuasively argues for viewing the imperial Chinese state as illiberal in a comparative perspective; Qin (2025) examines the historical origins of the illiberal elements of the imperial Chinese state. On the difference between regionally and functionally organized states, see, for example, Maskin et al. (2000) and Qian et al. (1999, 2006); on federalism, feudalism, and their comparison with the Chinese case, see Bloch (1962a,b), Montinola et al. (1995), Qian and Weingast (1997), and Li (2003); on democracy as capacity to constrain the ruler, see Ober (2008), Stasavage (2020), and Li et al. (2024); on liberty as independence, see Skinner (1998, 2022, 2025); on the debate about the political geography of the Shang state, see Song and Liu (2006, p. 254–264).

[21]The location of Luoyi had also been believed to be near the original center of the Xia civilization, reflecting the Zhou's ambition to rule the realm from its traditional center, i.e., the Central Realm (e.g., Li, 2017, p. 300–302; Li, 2018b, p. 330–340; Hsu, 2018, p. 114; Ma, 2013, p. 119, 124).

subject population to secure control, corresponding to the case of $\theta \geq 1/2$ in Proposition 1, and Proposition 1 suggests that the Zhou court would now have little incentive to deviate from the Shang tradition in denying the intellectual elites independence, which corresponds to choosing $\gamma = \underline{\gamma} < 1$.

Indeed, in the power structure of Western Zhou society after the Zhou court's holistic approach was adopted, the Zhou king was still the highest priest of the Zhou rule in an elaborate system of ancestral worship, which was in turn based on the lineage-ordered kinship structure among the Zhou people (e.g., Finer, 1997, p. 449–450). The intellectual elites were still working as bureaucrats within the Zhou state, serving the king. A system of priestly offices, Invocators 祝, were responsible for the religious functions of the Zhou state, but their significance has declined (e.g., Li, 2008, p. 58, 77–78). More important in both ritual and administrative affairs were now the scribal officials, including the Document Makers, whom we have briefly met in the Late Shang era, and another developed category of offices, the Scribes 史, and their responsibilities were not limited to "composing and writing official documents such as royal decrees and other letters that emanated from the central government, …producing and keeping records in the various branches of the government," and "proclaiming royal decrees" (Li, 2008, p. 57, 61; Xu, 2021, p. 90) – as summarized by Xu (2006, p. 103–104) and Yan (2001b), all kinds of scribal officials within the Zhou state were charged with responsibilities in civil, legal, archival, ritual, historiographic, religious, astronomical, and other proto-scientific affairs, and even military-advisory roles (also Hsu, 2018, p. 231–234; Xu, 2006, p. 54–107; Kern, 2007, p. 115–140; Li, 2008, 55–57, 60–62, 300; Xu, 2021, p. 14–202).[22] Unsurprisingly, not only were these scribal officials "the prototype of the king's administrative bureaucrats [吏]" (Chen, 2016, p. 91), but the title Scribes would also be used "throughout Chinese history" for all kinds of intellectual elites – the "'historian,' 'historiographer,' or 'archivist,' 'ritualist,' or 'astrologer'" (Kern, 2007, p. 115), or "writers of history and astronomical calculations [文史星曆]" as in Sima Qian's words (Ban, 1962, p. 2732; Owen, 1996, p. 139; also p. 135). In short, these intellectual elites within the Zhou states were the mandarins – the scholar-bureaucrats.

On the relationship between these learned bureaucrats and the Zhou king, in general, "the Western Chou Kings were able to …have reasonable freedom to select, appoint, and promote

[22]Li (2008, p. 54–67) sees both the Document Makers and the Scribes as regular but distinct offices, whereas Xu (2021, p. 95–163) sees the Document Maker as a legacy title borne by some intellectual elites among the Shang remnants affiliated to the Zhou state, and over time the title eventually ceased to function as a distinct office but was integrated into the category of the Scribes. In addition, heads of scribal offices were sometimes titled *Yinshi* 尹氏, i.e., "of the Yin 尹 lineage 氏," which was named after Yi 佚（逸）, a Grand Scribe 大（太）史 and Document Maker active during the founding years of the Zhou dynasty, whose estate was at Yin 尹, thus referred to as Yin Yi 尹佚（逸）, Scribe Yi 史佚（逸）, or Document Maker Yi 乍（作）冊逸 in contemporaneous inscriptions (Li, 2016; Xu, 2021, p. 164–202; Xu, 2006, p. 286–292).

his officials," and there was "little indication that genuinely hereditary office played any major role in the Western Chou period" (Creel, 1970, p. 396, 400). In particular, although heads of important sub-branches of the Zhou royal lineage were almost always appointed top officials in the Zhou state and granted land by the king, the king was still the ultimate source of any administrative power and the ultimate owner of all the land in the realm, and there were no formal constraints on king's power; as a result, de jure, these bureaucratic positions were not hereditary; de facto, keeping these positions and land relied on keeping being appointed by the king, and, as seen in a number of cases, losing the king's favor could lead to not only losing the positions, but also division of the land and subject population on it (e.g., Zhu, 2004, p. 373–374, 390–396). Some, not all, intellectual elites among the Shang remnants managed to maintain their status and positions as Document Makers or Scribes within the Zhou state, but maintaining such status "was above all conditional on them having transformed themselves into a loyal lineage to the Western Zhou state" (Xu, 2021, p. 220; also p. 211–223). Although many of the scribal offices were held within a family over generations due to their technocratic nature, "the office must be appointed by the Zhou king" and would be lost once not appointed (Xu, 2006, p. 111; also p. 7–8, 110–112). Taking all this, as first and foremost bureaucrats within the Zhou state, the intellectual elites were still subject to the arbitrary power of the Zhou king – they were still dependent on the ruler, rather than independent of him.

Resulting intellectual tradition, and dependence as a steady state. Our Proposition 2 suggests that, given such dependent status of intellectual elites in the Western Zhou era, the intellectual tradition preserved and developed at the time would facilitate an institutional environment in which the dependent status of intellectual elites would become a steady state. Indeed, the intellectual elites in this era, represented by the scribal officials, had preserved and developed an intellectual tradition of archival, historiographical, religious, philosophical, and political-theoretical scholarships (Xu, 2006, p. 173–184, 219–256). In general, such an intellectual tradition was "subordinate to the state politics," since "as state bureaucrats, it was impossible for the scribal officials not to serve the state's objective, and their historiography was done …predominantly with the political implications of such historiography in mind, making it a political action"; as a result, "the principle of early Chinese historiography was, more often than not, political, not historical" (Xu, 2006, p. 283–284).

In particular, as reflected in the earliest literature from the era, such as the chapters of the Zhou Pronouncements 周誥 in the *Book of Documents* 書 and the *Greater Encomia* 大雅 section of the *Book of Poetry* 詩, which are believed to "have been preserved, in most cases in the Western Chou royal archives" (Creel, 1970, p. 449), the resulting intellectual

tradition in the Western Zhou era did not question the validity of the discourse of the Mandate of Heaven; instead, it took the discourse as *the* theoretical framework for political legitimacy, and developed, debated, clarified, and promulgated many of its details, such as how precarious the holding of the Mandate could be; what specific virtues and misdeeds would lead to receiving and losing the Mandate, respectively; what role the people might have in the theory; and specifically who – the Zhou people, their kings, or only one or two of them – were the true recipients of the Mandate (e.g., Creel, 1970, 94–99, 447–455, 463; Fu, 2018, p. 114–135; Hsu, 2018, p. 116–125; Shaughnessy, 1999, p. 294–295, 313–317; Li, 2008, p. 294–295; Li, 2013, p. 144; Li, 2017, p. 305–307; Li, 2018b, p. 366). As part of this intellectual tradition, a particular but fundamental point in the theory of Mandate of Heaven was developed: "[s]ince the mandate could be granted only once by Heaven, particularly to King Wen, no subsequent Zhou kings could again claim the status as the recipient of the mandate"; therefore, "King Wen …was the sole bearer of the sovereignty of the Zhou state from which all authority originated," whereas "the reigning Zhou king ruled on behalf of King Wen and King Wu with a sovereign power delegated to him," and his "legitimacy as king rested first of all on [his] genealogical link to King Wen" (Li, 2008, p. 295; Li, 2013, p. 144).[23] As such, the theory of the Mandate of Heaven "provided legitimate authority for the king to eliminate any potential threats from outside and within," and consolidated the theoretical "basis" and "foundation" of the afore-discussed Western Zhou State (Li, 2008, p. 33, 292, 301; also Creel, 1970, p. 44, 82, 93–94). It was considered to be so successful that even many among the Shang remnants became accepting of the theory over time, to the degree that "[f]ive centuries after the conquest a scion of the Shang royal house said that it would be highly dangerous to attempt to raise their line to power again, for 'Heaven's rejection of the Shang is of long standing'" (Creel, 1970, p. 86).

In our theoretical framework, this situation corresponds to a dependent intellectual elite today, with $\gamma_t = \underline{\gamma} < 1$, shaping the institutional environment in the future such that the ruler's need for an independent intellectual elite is kept at a low level, i.e., $\theta_{t+1} = \bar{\theta} \geq 1/2$, which is consistent with Proposition 2. As we have discussed above, this had been leading to the situation that the intellectual elites were kept dependent within the Zhou state, i.e., $\gamma_{t+1} = \underline{\gamma} < 1$; indeed, even within the Zhou state, the social status and political significance of the scribal and priestly offices had generally declined over the Western Zhou period, to the extent that, over to the Eastern Zhou period (771–256 BCE), "the scribal officials …had been reduced to the ruler's slaves and dependents, firmly under his control" (Xu, 2006, p. 141; also p. 137–140). We can thus read the dependent status of the intellectual elites in the

[23] As the actual conqueror, only King Wu was added into the formula as a co-recipient of the Mandate of Heaven from the mid-Western Zhou era (Li, 2008, p. 295).

Western Zhou era as a steady state, as a result of the mechanism described in Proposition 2. The historical opportunity for Chinese society to foster a significant class of independent intellectual elites was forgone – if such an opportunity ever existed, in this transitional yet constitutive period of Chinese civilization.

Almost total security of control. As probably only a side note, our Propositions 1 and 2 also suggest that, in this steady state, given little demand from the Zhou court for independent intellectual elites, having such dependent intellectual elites would help the Zhou court achieve an almost total security of their control over the realm and, especially, the Shang remnants. That is exactly what happened – "[f]or centuries, all of our sources indicate, the Chou were not again required to take any military action to enforce their authority against any of the erstwhile Shang people. Shang armies, still so called, were incorporated into the military forces under direct command of the Chou King, and they appear to have been completely obedient to him" (Creel, 1970, p. 86; also Zhu, 2004, p. 276). From the suppression of the great rebellion of the Shang remnants in c. 1039 BCE, it was not until 771 BCE when the Zhou court, during a deep crisis, had to abandon its western base and flee to its eastern capital – hereby ended the Western Zhou era (e.g., Hsu, 2018, p. 298–326; Li, 2006; Li, 2018a, p. 103–105). But this era, the era that we have just discussed, had "set up initial conditions for a long historical process that, through important modifications, eventually led to the rise of the Qin Empire (221–207 BC)," i.e., the beginning of the Chinese imperial system (Li, 2018a, p. 84; also Finer, 1997, p. 526–527; Xu, 2025, p. 122–162) – that would be a closely related, yet separate story.

6 Conclusion

In this paper, I model the strategic, dynamic interaction between an incumbent political authority, an intellectual elite, and a political audience, whose support is critical to the authority's survival and can be influenced by the intellectual elite via communication. As its premises, the model borrows three insights from informational economics, political philosophy, and legal and political history, respectively: one processes information not too naively; one is free, or independent, if and only if she is not subject to any arbitrary power; the intellectual elite today could shape the institutional environment of society tomorrow. This model helps to articulate a theory: the (in)dependent status of intellectual elites may stem from the need or not on the authority's behalf for their effective influence over the political audience, and such status can persist in equilibrium. As illustrative tests, I discuss the relevance and usefulness of the theory in the context of early India and China.

One may mistake our theory as historical determinism. Although Proposition 2 shows that the (in)dependent status of intellectual elites can persist, it does not mean that society must be trapped in either of the two steady states. Indeed, a shock in our model that moves the level of reliance of the political authority on the intellectual elite's influence over the political audience from $\theta_t = \underline{\theta}$ to $\theta_t = \bar{\theta}$, or vice versa, may change the intellectual elite's status in equilibrium from being independent to dependent, or vice versa.

The insights from our theory may extend beyond early India and China. For example, in terms of whether there had been a significant class of independent intellectual elites, we may see more similarities between the Indian tradition and the Jewish, Islamic, and Western Christian traditions, versus the situations found in early China, Sumerian city-states, ancient Egypt, and possibly the Classic Maya civilization (e.g., Berman, 1983; Brown, 1992; Postgate, 1994; Finer, 1997; Houston and Stuart, 2001; Hallaq, 2004; Pirie, 2021; Huq, 2023). More effort is warranted in these directions.[24] Not only relevant to ancient traditions of intellectual elites, our theory is also applicable more generally to understanding other sources of legitimacy. For example, as noted by Greif and Rubin (2024a), when the Tudor kings of England lacked traditional legitimacy after breaking with Rome, they promoted Parliament as an independent, alternative source of legitimacy.

Minimal for our purpose, our model assumes away many important factors that may differ across societies and traditions. One such factor is whether there are multiple political authorities or, more generally, potential patrons of intellectual elites, in particular when comparing imperial China and premodern Europe (e.g., Ko et al., 2018; Fernández-Villaverde et al., 2023; Jia et al., 2024), and one can postulate that, when there are multiple rulers or

[24]Under the bigger picture, our theory may also provide reappraisals of some major events in the history of institutions of intellectual elites. For example, in 1155, the Holy Roman Emperor Frederick I Barbarossa issued the celebrated *Authentica Habita*, which granted the scholars and students of law at Bologna the freedom of movement and extended to them the benefit of clergy (Rashdall, 1895, p. 145–146; Nardi, 1992, p. 78; Cutler and Glaeser, 2026, p. 22). Should we understand the *Habita* as a constitutional document for an *independent* University of Bologna, or, more generally, for the tradition of *independent* medieval universities in Europe? Maybe yes as a precedent, but probably not in its immediate effect. As the alternative title of the charter, *Privilegium Scholasticum*, has betrayed, the charter affirmed the status of the scholars' privileges as *privileges*, which was *granted* by the emperor (Kibre, 1962, p. 10; Nardi, 1992, p. 78). In our theory, it would be more appropriate to read such a charter not as to promote the scholars' independence, but to affirm their dependence on the emperor. Our theory would then imply that such a move by Frederick I, however he might have hoped, would weaken, rather than strengthen, the scholars' influence over the political audience – the Lombard cities – at the time. Indeed, in 1158, during the Diet of Roncaglia, the Four Doctors of Bologna supported the emperor's rule over northern Italy by divine right, but the cities did not accept the verdict, which led to the emperor's war against the cities in 1159–1162, culminating in the sieges of Crema and Milan (Rashdall, 1895, p. 145; Nardi, 1992, p. 78–79; Cutler and Glaeser, 2026, p. 22–23). Consistent with our reading, it was said that Frederick I had ordered to expel Lombard students from Bologna during the war, and had ignored the *Habita* when begged by the masters in the university to revoke the order (Nardi, 1992, p. 79) – the scholars' privileges granted in the *Habita* were indeed only privileges, not rights, and as such, the *Habita* affirmed dependence, not independence, of the scholars.

potential patrons in society, they may compete to host intellectual elites by committing to promoting or safeguarding their independent status. That said, this postulated theory presumes that these rulers or potential patrons may find such independent status of intellectual elites useful for their rule or standing, while our theory provides a micro-foundation for this presumption. At the same time, in our theoretical framework, having other competing rulers may help the intellectual elite keep the ruler in question relying on her effective influence over the political audience for his survival, thus helping her independent status persist. In this sense, the postulated theory here and our theory are complements, rather than substitutes, in explaining the origin and persistence of (in)dependent intellectual elites.

Our theory may appear to some as elitist, but it is not. The most general interpretation of our model would make the player E not only the intellectual elite, but also anyone who could provide informational accountability against tyranny, or express such a value by "show[ing] that it is possible to live within the truth" (Havel, 1985, p. 40). That is to say, E represents not only the ones who "are entitled to wear a gown: the judge, the priest, the scholar" – in the words of Kantorowicz (1950) – but also the press, citizen journalism, and social media, and "writers, …teachers, …painters, musicians, and singers" – "[t]he list could go on" – or simply but famously, "our greengrocer," i.e., "everyone," in the words of Havel (1985, p. 39, 66). The independence of E is thus not only the independence of the intellectual elite, but also the liberty of *everyone* in society. And our theory tells us that it is everything that is at stake when we think about whether, and how, we can preserve such liberty.

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Appendix

A Proof of Proposition 2

Proof. We examine all possible single deviations. First, consider R's choice of γ_t, given $\theta_t = \underline{\theta}$. On the conjectured equilibrium path, R will always survive if and only if the state of the world is good for him, implying an expected payoff of

$$V^R_{\theta_t=\underline{\theta}} = \underline{\theta} \cdot \left(1 + \rho \cdot V^R_{\theta_{t+1}=\underline{\theta}}\right) = \underline{\theta} \cdot \left(1 + \rho \cdot V^R_{\theta_t=\underline{\theta}}\right) = \frac{\underline{\theta}}{1 - \rho\underline{\theta}} > 0, \tag{A.1}$$

where $V^R_{\theta_{t+1}=\underline{\theta}}$ is the expected payoff of R at the beginning of period $t+1$, given $\theta_{t+1} = \underline{\theta}$, and on the conjectured equilibrium path. The single deviation, i.e., to choose $\gamma_t = \underline{\gamma}$ with everyone staying on the conjectured equilibrium path after that, would have him removed for sure this period, implying an expected payoff of

$$\tilde{V}^R_{\theta_t=\underline{\theta}} = 0 < V^R_{\theta_t=\underline{\theta}}. \tag{A.2}$$

Therefore, the single deviation would not make R better off.

Second, consider R's choice of γ_t, given $\theta_t = \bar{\theta}$. On the conjectured equilibrium path, R will always survive for sure, expecting a payoff of

$$V^R_{\theta_t=\bar{\theta}} = 1 + \rho \cdot V^R_{\theta_{t+1}=\bar{\theta}} = 1 + \rho \cdot V^R_{\theta_t=\bar{\theta}} = \frac{1}{1-\rho}, \tag{A.3}$$

where $V^R_{\theta_{t+1}=\bar{\theta}}$ is the expected payoff of R at the beginning of period $t+1$, given $\theta_{t+1} = \bar{\theta}$, and on the conjectured equilibrium path. The single deviation, i.e., to choose $\gamma_t = 1$ with everyone staying on the conjectured equilibrium path after that, would make it possible for him to be removed from now on, implying an expected payoff of

$$\begin{aligned}\tilde{V}^R_{\theta_t=\bar{\theta}} &= \bar{\theta} \cdot \left(1 + \rho \cdot V^R_{\theta_{t+1}=\underline{\theta}}\right) = \bar{\theta} \cdot \left(1 + \rho \cdot V^R_{\theta_t=\underline{\theta}}\right) \\ &= \bar{\theta} \cdot \left(1 + \rho \cdot \frac{\underline{\theta}}{1 - \rho\underline{\theta}}\right) = \frac{\bar{\theta}}{1 - \rho\underline{\theta}} < \frac{1}{1-\rho} = V^R_{\theta_t=\bar{\theta}}.\end{aligned} \tag{A.4}$$

Therefore, the single deviation would not make R better off.

Third, consider E's choice of θ_{t+1}, given $\gamma_t = 1$ and any $\theta_t \in \left\{\underline{\theta}, \bar{\theta}\right\}$. On the conjectured equilibrium path, E is and will always be independent from now on, always telling the truth while surviving forever without any repercussion. This gives E a payoff of $1 + \epsilon$ in each period from now on, where $\epsilon \in \left(0, 1 - \underline{\gamma}\right)$ is small but strictly positive. The single deviation,

i.e., to choose $\theta_{t+1} = \bar{\theta}$ with everyone staying on the conjectured equilibrium path after that, would make E always dependent in the future, after being independent only this period. This would force E never to move against R in the future, so as to avoid repercussion. This would give E a payoff of $1+\epsilon$ in the current period, as she would be telling the truth without any repercussion, and in each future period when the state of the world turns out to be good for R and E is telling the truth, but only a payoff of $1 < 1+\epsilon$ in each future period when the state of the world turns out to be bad for R and E is lying about it. Since $\bar{\theta} < 1$, there is always a strictly positive chance in any future period that the state will turn out to be bad for R. Therefore, the single deviation would not make E better off.

Fourth, consider E's choice of θ_{t+1}, given $\gamma_t = \underline{\gamma}$ and any $\theta_t \in \left\{\underline{\theta}, \bar{\theta}\right\}$. On the conjectured equilibrium path, E is and will always be dependent from now on. This would force E never to move against R, so as to avoid repercussion. This gives E an expected payoff of

$$V^E_{\gamma_t=\underline{\gamma},\forall\theta_t} \geq \frac{1}{1-\rho}, \tag{A.5}$$

since she will get 1 in each period from now on when the state of the world turns out to be bad for R and she is lying about it, while $1+\epsilon > 1$ in each period from now on when the state of the world turns out to be good for R and she is telling the truth. The single deviation, i.e., to choose $\theta_{t+1} = \underline{\theta}$ with everyone staying on the conjectured equilibrium path after that, would make E exit the game right now, receiving an expected payoff of

$$\tilde{V}^E_{\gamma_t=\underline{\gamma},\forall\theta_t} = \frac{\underline{\gamma}}{1-\rho} < \frac{1}{1-\rho} \leq V^E_{\gamma_t=\underline{\gamma},\forall\theta_t}. \tag{A.6}$$

Therefore, the single deviation would not make E better off.

Fifth, consider E's choice of m_t when seeing $s_t = b$, given $\gamma_t = 1$ and any $\theta_{t+1} \in \left\{\underline{\theta}, \bar{\theta}\right\}$. On the conjectured equilibrium path, E is independent now, but will always be independent in the future if and only if $\theta_{t+1} = \underline{\theta}$, i.e., E will either always be independent, thus surviving forever without any repercussion, or always be dependent, thus never moving against R, so as to avoid repercussion. In any case, this gives E a payoff of $1+\epsilon$ in the current period, and at least 1 in each future period. The single deviation, i.e., to choose $m_t = g$ when seeing $s_t = b$ with everyone staying on the conjectured equilibrium path after that, would reduce E's payoff this period from $1+\epsilon$ to 1, and, since θ_{t+1} is given, would not change E's expected payoff for all future periods. Therefore, the single deviation would not make E better off.

Sixth, consider E's choice of m_t when seeing $s_t = b$, given $\gamma_t = \underline{\gamma}$ and any $\theta_{t+1} \in \left\{\underline{\theta}, \bar{\theta}\right\}$. On the conjectured equilibrium path, E is dependent now, but will always be independent in the future if and only if $\theta_{t+1} = \underline{\theta}$, i.e., E will either always be independent, thus surviving

forever without any repercussion, or always be dependent, thus never moving against R, so as to avoid repercussion. In any case, this gives E an expected payoff of

$$V^E_{\gamma_t=\underline{\gamma},s_t=b,\forall\theta_{t+1}} \geq \frac{1}{1-\rho}. \tag{A.7}$$

The single deviation, i.e., to choose $m_t = b$ when seeing $s_t = b$ with everyone staying on the conjectured equilibrium path after that, would make E exit the game right now, receiving an expected payoff of

$$\tilde{V}^E_{\gamma_t=\underline{\gamma},s_t=b,\forall\theta_{t+1}} = \frac{\underline{\gamma}+\epsilon}{1-\rho} < \frac{1}{1-\rho} \leq V^E_{\gamma_t=\underline{\gamma},s_t=b,\forall\theta_{t+1}}, \tag{A.8}$$

since $\epsilon \in \left(0, 1-\underline{\gamma}\right)$ is small. The single deviation would thus not make E better off.

Finally, consider P's choice of keeping or removing R in period t, given any $\theta_t \in \left\{\underline{\theta}, \bar{\theta}\right\}$, $\gamma_t \in \{1, \underline{\gamma}\}$, $m_t \in \{g, b\}$, and $\theta_{t+1} \in \left\{\underline{\theta}, \bar{\theta}\right\}$. Since θ_{t+1} is given, a single deviation of P here will not affect her continuation value on the conjectured equilibrium path after period t. Also, by Proposition 1, considering payoffs only in period t, P's choice of keeping or removing R in the conjectured equilibrium strategy is P's best response to the other players' conjectured equilibrium strategies. Therefore, no single deviations here would make P strictly better off.

Therefore, no single deviation would make any of the players strictly better off. The proposition is thus proved. □

B Permanent versus Temporary Repercussion

Now consider the alternative setting with temporary repercussion proposed in Section 3, following Proposition 2: once a currently dependent E, i.e., with $\gamma_t = \underline{\gamma}$, chooses $\theta_{t+1} = \underline{\theta}$, then, with probability $p \in [0, 1]$, she will still exit the game with a flow payoff of $\underline{\gamma}$ thereafter, suffering a permanent repercussion; with probability $1-p$, instead, she will stay in the game and survive into period $t+1$, regardless of how she will eventually communicate with P in period t, and the only punishment for her is to receive eventually only $\underline{\gamma}$ in period t; the game remains unchanged for all future periods.

Under this alternative setting, staying on the formerly conjectured equilibrium path, i.e., never moving against R and, in particular, not making R rely on E's influence in the future, would make the currently dependent E survive forever but with a dependent status, and she would have to tell a lie with a payoff of 1 whenever needed, i.e., seeing a bad state for R, which would happen with probability $1-\theta_t$ in period t and $1-\bar{\theta}$ in each future period, while automatically telling the truth with a payoff of $1+\epsilon$ whenever seeing a good state for R,

which would happen with probability $\theta_t \in \{\underline{\theta}, \bar{\theta}\}$ in period t and $\bar{\theta}$ in each future period, where $\epsilon \in (0, 1-\underline{\gamma})$ is still small but strictly positive. Her expected payoff, at the moment of her choice of θ_{t+1} in period t, would thus be

$$V^E = 1 + \epsilon\theta_t + \rho \cdot \frac{1+\epsilon\bar{\theta}}{1-\rho}. \tag{B.1}$$

A single deviation to make R rely on E's influence in the future right now would present E with two scenarios. In the first scenario of permanent repercussion, which would happen with probability p, E would expect an expected payoff of $\underline{\gamma} + \rho\underline{\gamma}/(1-\rho)$; in the second scenario of temporary repercussion, which would happen with probability $1-p$, E would suffer a loss now, but would be able to always tell the truth given an independent status in all future periods, thus having an expected payoff of $\underline{\gamma} + \rho(1+\epsilon)/(1-\rho)$. Her expected payoff under the single deviation is thus

$$\begin{aligned}\tilde{V}^E &= \left(\underline{\gamma} + \rho \cdot \frac{\underline{\gamma}}{1-\rho}\right) \cdot p + \left(\underline{\gamma} + \rho \cdot \frac{1+\epsilon}{1-\rho}\right) \cdot (1-p) \\ &= \underline{\gamma} + \rho \cdot \frac{1+\epsilon - (1+\epsilon-\underline{\gamma}) \cdot p}{1-\rho}.\end{aligned} \tag{B.2}$$

Now compare that with the expected payoff on the conjectured equilibrium path. First, note that, by $\theta_t > 0$, $\underline{\gamma} < 1 < 1 + \epsilon\theta_t$, i.e., E would sacrifice in the short run under the single deviation. Second, under the single deviation, E would gain in the long run only if

$$1 + \epsilon - (1+\epsilon-\underline{\gamma}) \cdot p > 1 + \epsilon\bar{\theta}, \quad \text{i.e.,} \quad p < \frac{\epsilon \cdot (1-\bar{\theta})}{1+\epsilon-\underline{\gamma}} \equiv \bar{p}, \tag{B.3}$$

where $\bar{p} < 1$ because of $\epsilon > 0$, $\underline{\gamma} < 1$, and $\bar{\theta} > 0$; if $p \geq \bar{p}$, then no trade-off would be present, and the single deviation would not make E better off, given any $\rho \in (0,1)$. Finally, if indeed $p < \bar{p}$, then the single deviation would make E better off if and only if the long-run gain exceeded the short-run sacrifice, i.e.,

$$\frac{\rho}{1-\rho} \cdot \left(\epsilon - (1+\epsilon-\underline{\gamma}) \cdot p - \epsilon\bar{\theta}\right) > 1 + \epsilon\theta_t - \underline{\gamma}, \tag{B.4}$$

or

$$\rho > \frac{1+\epsilon\theta_t - \underline{\gamma}}{1+\epsilon\theta_t - \underline{\gamma} + \epsilon \cdot (1-\bar{\theta}) - (1+\epsilon-\underline{\gamma}) \cdot p} \equiv \bar{\rho}, \tag{B.5}$$

where $\bar{\rho} < 1$ because of $\epsilon > 0$, $\theta_t > 0$, $\underline{\gamma} < 1$, and $p < \bar{p}$. In that case, E would not stay on the conjectured equilibrium path – the dependent status of E would not persist.

C Permanent Downfall versus Temporary Lapse

Now consider the alternative setting with temporary lapse proposed in Section 3, following Proposition 2: if P moves against an R who is relying on E's effective influence over P for his survival in period t, i.e., with $\theta_t = \underline{\theta}$, then, with probability $q \in [0,1]$, R will still exit the game with a zero payoff; with probability $1-q$, instead, he will still receive a zero payoff in period t, but will stay in the game and survive into period $t+1$; the game remains unchanged for all future periods.

Under this alternative setting, staying on the formerly conjectured equilibrium path, i.e., choosing an independent E, would let such R survive period t if the state of the world turns out to be good for him, which would happen with probability $\underline{\theta}$, or if the state turns out to be bad for him but he suffers only a temporary lapse, which would happen with probability $(1-\underline{\theta})(1-q)$; in either case, in all future periods, he will survive if and only if the state turns out to be good, which would happen with probability $\underline{\theta}$ in each future period. His expected payoff is thus

$$\begin{aligned} V^R &= \left(1 + \frac{\rho\underline{\theta}}{1-\rho\underline{\theta}}\right) \cdot \underline{\theta} + \left(0 + \frac{\rho\underline{\theta}}{1-\rho\underline{\theta}}\right) \cdot (1-\underline{\theta})(1-q) \\ &= \underline{\theta} + \frac{\rho\underline{\theta}}{1-\rho\underline{\theta}} \cdot (1-(1-\underline{\theta})q)\,. \end{aligned} \tag{C.1}$$

A single deviation to choose a dependent E right now would lead P to move against R for sure in period t, and R will survive only if the lapse is temporary; if that were the case, R would then survive for sure in all future periods, since he would not be relying on E's effective influence over P and could thus make E always dependent. His expected payoff is thus

$$\tilde{V}^R = \left(0 + \frac{\rho}{1-\rho}\right) \cdot (1-q) = \frac{\rho}{1-\rho} \cdot (1-q). \tag{C.2}$$

Therefore, compared with the conjectured equilibrium path, the single deviation will present a temporary sacrifice, i.e., a lower expected payoff in period t, $0 < \underline{\theta}$, and a lower chance to survive into period $t+1$, i.e., $1-q < 1-(1-\underline{\theta})q$, but a higher expected payoff in the long run if R indeed survives into period $t+1$, i.e., $\rho/(1-\rho) > \rho\underline{\theta}/(1-\rho\underline{\theta})$.

Now analyze the potential trade-off. The higher expected payoff in the long run will dominate the lower chance to survive into period $t+1$, if and only if

$$\frac{\rho}{1-\rho} \cdot (1-q) > \frac{\rho\underline{\theta}}{1-\rho\underline{\theta}} \cdot (1-(1-\underline{\theta})q)\,, \tag{C.3}$$

i.e.,

$$q < \frac{1-\underline{\theta}}{1-\underline{\theta}+(1-\rho)\underline{\theta}^2} \equiv \bar{q}, \tag{C.4}$$

where $\bar{q} < 1$ because of $\rho < 1$ and $\underline{\theta} > 0$. Therefore, if $q \geq \bar{q}$, the single deviation will not make R better off, given any $\rho \in (0,1)$.

Now suppose $q < \bar{q}$, then the single deviation will make R better off if and only if

$$\frac{\rho}{1-\rho} \cdot (1-q) > \underline{\theta} + \frac{\rho\underline{\theta}}{1-\rho\underline{\theta}} \cdot (1-(1-\underline{\theta})\,q)\,, \tag{C.5}$$

i.e.,

$$\frac{\rho}{1-\rho} \cdot (1-q) - \frac{\rho\underline{\theta}}{1-\rho\underline{\theta}} \cdot (1-(1-\underline{\theta})\,q) > \underline{\theta}. \tag{C.6}$$

Observe that the left-hand side

$$\begin{aligned} L &\equiv \frac{\rho}{1-\rho} \cdot (1-q) - \frac{\rho\underline{\theta}}{1-\rho\underline{\theta}} \cdot (1-(1-\underline{\theta})\,q) \\ &= \frac{\rho}{(1-\rho)\,(1-\rho\underline{\theta})} \cdot \left((1-\underline{\theta})\,(1-q) - (1-\rho)\underline{\theta}^2 q\right) \equiv A \cdot B, \end{aligned} \tag{C.7}$$

where

$$A \equiv \frac{\rho}{(1-\rho)\,(1-\rho\underline{\theta})} > 0 \tag{C.8}$$

is strictly increasing in ρ because of $\rho \in (0,1)$ and $\underline{\theta} \in (0,1)$, and

$$B \equiv (1-\underline{\theta})\,(1-q) - (1-\rho)\underline{\theta}^2 q > 0 \tag{C.9}$$

is weakly increasing in ρ because of $q \in [0,\bar{q})$, $\underline{\theta} \in (0,1)$. Therefore, L is strictly increasing in ρ. Also observe that L is continuous in ρ, $L \to 0$ as $\rho \to 0$, and $L \to \infty$ as $\rho \to 1$. Therefore, there exists a unique $\hat{\rho} \in (0,1)$ such that

$$L = \frac{\rho}{1-\rho} \cdot (1-q) - \frac{\rho\underline{\theta}}{1-\rho\underline{\theta}} \cdot (1-(1-\underline{\theta})\,q) > \underline{\theta} \tag{C.10}$$

if and only if $\rho > \hat{\rho}$. In that case, R would not stay on the conjectured equilibrium path – the independent status of E would not persist.

D Proof of Proposition 3

Proof. We prove the proposition by a series of claims:

Claim 1. In any MPE, when seeing $s_t = b$, if $\gamma_t = 1$, then E will choose $m_t = b$, regardless of θ_{t+1}. Consider E's choice of m_t when seeing $s_t = b$, given $\gamma_t = 1$ and any θ_{t+1}, in any MPE. Messaging $m_t = b$, i.e., speaking the truth, will give her a payoff of $1 + \epsilon$ in period t, plus a continuation value, given θ_{t+1}, into period $t + 1$. Messaging $m_t = g$, i.e., lying, will give her a payoff of 1 in period t, plus a continuation value, given θ_{t+1}, into period $t + 1$. Since θ_{t+1} is given, the two continuation values are the same; since $\epsilon > 0$, we must have $1 + \epsilon > 1$. Therefore, choosing $m_t = g$ is strictly dominated by choosing $m_t = b$, given any Markov perfect continuation strategies. The claim is thus proved.

Claim 2. If $0 < \epsilon < (1 - \rho)\left(1 - \underline{\gamma}\right)$, then, in any MPE, when seeing $s_t = b$, if $\gamma_t = \underline{\gamma}$, E will choose $m_t = g$, regardless of θ_{t+1}. Consider E's choice of m_t when seeing $s_t = b$, given $\gamma_t = \underline{\gamma}$ and any θ_{t+1}, in any MPE. Messaging $m_t = b$, i.e., speaking the truth but going against R, will make her exit the game with a flow payoff of $\underline{\gamma} + \epsilon$ thereafter, making an expected payoff of $\left(\underline{\gamma} + \epsilon\right)/(1 - \rho)$. Messaging $m_t = g$, i.e., lying but not going against R, will give her a payoff of 1 in period t, plus a continuation value into period $t + 1$. This continuation value is at least $\rho\underline{\gamma}/(1 - \rho)$, since the worst E can expect in period $t + 1$ was to exit the game with a flow payoff of $\underline{\gamma}$ thereafter, which could be reached if $\gamma_{t+1} = \underline{\gamma}$ and E chooses $\theta_{t+2} = \underline{\theta}$ in period $t + 1$. If $0 < \epsilon < (1 - \rho)\left(1 - \underline{\gamma}\right)$, then we will have

$$1 + \frac{\rho\underline{\gamma}}{1 - \rho} - \frac{\underline{\gamma} + \epsilon}{1 - \rho} = \frac{1 - \rho + \rho\underline{\gamma} - \underline{\gamma} - \epsilon}{1 - \rho} = \frac{(1 - \rho)\left(1 - \underline{\gamma}\right) - \epsilon}{1 - \rho} > 0, \tag{D.1}$$

i.e., choosing $m_t = b$ will be strictly dominated by choosing $m_t = g$, given any Markov perfect continuation strategies. The claim is thus proved.

Recall that E automatically messages $m_t = g$ when seeing $s_t = g$. Claims 1 and 2 thus suggest that, if $0 < \epsilon < (1 - \rho)\left(1 - \underline{\gamma}\right)$, then, in any MPE, the message from a dependent E, i.e., with $\gamma_t = \underline{\gamma}$, will always be totally uninformative, while that from an independent E, i.e., with $\gamma_t = 1$, will always truthfully reveal s_t.

Claim 3. If $0 < \epsilon < (1 - \rho)\left(1 - \underline{\gamma}\right)$, then, in any MPE, when $\gamma_t = 1$, P will keep R if $m_t = g$, and remove R if $m_t = b$, regardless of θ_t and θ_{t+1}; when $\gamma_t = \underline{\gamma}$, P will keep R if $\theta_t = \bar{\theta}$, and remove R if $\theta_t = \underline{\theta}$, regardless of m_t and θ_{t+1}. Consider P's choice to keep or remove R, given γ_t, m_t, and any θ_t and θ_{t+1}, in any MPE. Since θ_{t+1} is given, P's choice to keep or remove R will not affect her continuation value into period $t + 1$, given any Markov perfect continuation strategies. We can thus focus on P's expected payoff from only period t. By Claims 1 and 2, if $\epsilon \in \left(0, (1 - \rho)\left(1 - \underline{\gamma}\right)\right)$, then E's message will always truthfully reveal s_t if $\gamma_t = 1$, and will always be totally uninformative if $\gamma_t = \underline{\gamma}$.

Therefore, for P, if $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, then, when $\gamma_t = 1$, "keeping R if and only if $m_t = g$" will strictly dominate any other strategy, given any Markov perfect continuation strategies; when $\gamma_t = \underline{\gamma}$, since $0 < \underline{\theta} < 1/2 \leq \bar{\theta} < 1$, "keeping R if and only if $\theta_t = \bar{\theta}$" will strictly dominate any other strategy, given any Markov perfect continuation strategies. The claim is thus proved.

Claim 4. If $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, then, in any MPE, if $\theta_t = \underline{\theta}$, then R will choose $\gamma_t = 1$. Consider R's choice of γ_t, given $\theta_t = \underline{\theta}$, in any MPE. By Claims 1–3, if $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, then choosing $\gamma_t = \underline{\gamma}$ will guarantee his exit with a zero payoff thereafter, while choosing $\gamma_t = 1$ will give him a chance of $\underline{\theta} > 0$ to survive and receive 1 in period t, plus a non-negative continuation value into period $t+1$, given any Markov perfect continuation strategies, and a chance of $1-\underline{\theta}$ to be removed in period t with a zero exit payoff thereafter – the expected payoff from choosing $\gamma_t = 1$ will thus be strictly greater than zero. Therefore, choosing $\gamma_t = \underline{\gamma}$ will be strictly dominated by choosing $\gamma_t = 1$, given any Markov perfect continuation strategies. The claim is thus proved.

Claim 5. If $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, then, in any MPE, if $\gamma_t = \underline{\gamma}$, then E will choose $\theta_{t+1} = \bar{\theta}$, regardless of θ_t. Consider E's choice of θ_{t+1}, given $\gamma_t = \underline{\gamma}$ and any θ_t, in any MPE. Choosing $\theta_{t+1} = \underline{\theta}$ will make her exit immediately with a flow payoff $\underline{\gamma}$ thereafter, making an expected payoff of $\underline{\gamma}/(1-\rho)$. Choosing $\theta_{t+1} = \bar{\theta}$ will let her survive to the messaging stage of period t, and, by Claim 2, if $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, then she will either speak the truth and receive a payoff of $1+\epsilon$ when seeing $s_t = g$, or lie and receive a payoff of 1 when seeing $s_t = b$, and in both cases, she will receive a continuation value into period $t+1$, which is at least $\rho\underline{\gamma}/(1-\rho)$ by the same argument in the proof of Claim 2, given any Markov perfect continuation strategies. Since $\underline{\gamma} < 1$, we have

$$1 + \rho\underline{\gamma}/(1-\rho) > \underline{\gamma} + \rho\underline{\gamma}/(1-\rho) = \frac{\underline{\gamma}}{1-\rho}. \tag{D.2}$$

Therefore, if $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, then, for E, choosing $\theta_{t+1} = \underline{\theta}$ will always be strictly dominated by choosing $\theta_{t+1} = \bar{\theta}$, given any Markov perfect continuation strategies. The claim is thus proved.

Claim 6. If $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, then, in any MPE, if $\theta_t = \bar{\theta}$, then R will *not* choose $\gamma_t = 1$ as a pure strategy. Suppose $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, and suppose that there exists an MPE in which, if $\theta_t = \bar{\theta}$, R will choose $\gamma_t = 1$ as a pure strategy. On the conjectured equilibrium path, by Claims 1 and 3, choosing $\gamma_t = 1$ will give R a chance of $\bar{\theta}$

to survive period t with a payoff of 1 and a continuation value into period $t+1$, which is at most $\rho/(1-\rho)$, and a chance of $1-\bar{\theta}$ to be removed in period t with a zero flow payoff thereafter. His expected payoff is thus

$$V_{\theta_t=\bar{\theta},\gamma_t=1} \leq \left(1+\frac{\rho}{1-\rho}\right)\cdot\bar{\theta} = \frac{\bar{\theta}}{1-\rho}. \tag{D.3}$$

A single deviation, i.e., choosing $\gamma_t = \underline{\gamma}$ in only period t, by Claims 2, 3, and 5, would guarantee R's survival in period t with a payoff of 1, and coming back to the conjectured equilibrium path in period $t+1$ but at the same state as in period t, i.e., choosing $\gamma_{t+1}=1$ when $\theta_{t+1}=\bar{\theta}$. His expected payoff would thus be

$$V' = 1+\rho V_{\theta_{t+1}=\bar{\theta},\gamma_{t+1}=1} = 1+\rho V_{\theta_t=\bar{\theta},\gamma_t=1}. \tag{D.4}$$

Observe that

$$V' - V_{\theta_t=\bar{\theta},\gamma_t=1} = 1+\rho V_{\theta_t=\bar{\theta},\gamma_t=1} - V_{\theta_t=\bar{\theta},\gamma_t=1} = 1-(1-\rho)V_{\theta_t=\bar{\theta},\gamma_t=1} \geq 1-\bar{\theta} > 0. \tag{D.5}$$

Therefore, the single deviation would make R better off. The conjectured MPE is thus not an MPE, and the claim is proved by contradiction.

Taking stock, if $0<\epsilon<(1-\rho)\left(1-\underline{\gamma}\right)$, then, by Claims 1–6, the only potential pure-strategy MPEs are as in Table D.1, together with the strategies pinned down by Claims 1–5. Among them, Proposition 2 has established that Conjectured MPE 1 is indeed an MPE. We now examine the other three, one by one:

Table D.1: Strategies in potential pure-strategy MPEs, together with the strategies pinned down by Claims 1–5, if $0<\epsilon<(1-\rho)\left(1-\underline{\gamma}\right)$

Conjectured MPE	R's choice of γ_t when $\theta_t=\bar{\theta}$	E's choice of θ_{t+1} when $\gamma_t=1$, $\theta_t=\underline{\theta}$	E's choice of θ_{t+1} when $\gamma_t=1$, $\theta_t=\bar{\theta}$
1	$\gamma_t=\underline{\gamma}$	$\theta_{t+1}=\underline{\theta}$	$\theta_{t+1}=\underline{\theta}$
2	$\gamma_t=\underline{\gamma}$	$\theta_{t+1}=\underline{\theta}$	$\theta_{t+1}=\bar{\theta}$
3	$\gamma_t=\underline{\gamma}$	$\theta_{t+1}=\bar{\theta}$	$\theta_{t+1}=\underline{\theta}$
4	$\gamma_t=\underline{\gamma}$	$\theta_{t+1}=\bar{\theta}$	$\theta_{t+1}=\bar{\theta}$

Claim 7. If $0<\epsilon<(1-\rho)\left(1-\underline{\gamma}\right)$, then Conjectured MPE 2 will not be an MPE. Suppose $0<\epsilon<(1-\rho)\left(1-\underline{\gamma}\right)$, and consider E's choice of θ_{t+1} given $\gamma_t=1$ and $\theta_t=\bar{\theta}$. Since $\gamma_t=1$ is given, by Claim 1, E will always speak the truth and receive a payoff of $1+\epsilon$ in period t. On the conjectured equilibrium path, choosing $\theta_{t+1}=\bar{\theta}$ will lead to her dependence

in period $t+1$ and, by Claim 2, her only being able to speak the truth when seeing a good state for R, which will happen with probability $\bar{\theta}$; moreover, by Claim 5, such dependence will persist in all future periods on the conjectured equilibrium path. Her expected payoff is thus

$$1+\epsilon+\frac{\rho\left((1+\epsilon)\cdot\bar{\theta}+1\cdot\left(1-\bar{\theta}\right)\right)}{1-\rho}=1+\epsilon+\frac{\rho\left(1+\epsilon\bar{\theta}\right)}{1-\rho}. \tag{D.6}$$

A single deviation, i.e., choosing $\theta_{t+1}=\underline{\theta}$ only in period t, would, by Claim 4, lead to her independence and, by Claim 1, always being able to speak the truth in period $t+1$; moreover, coming back to the equilibrium path, she will choose $\theta_{t+2}=\underline{\theta}$, and by Claim 4, such independence will persist in all future periods on the conjectured equilibrium path. Her expected payoff would thus be

$$1+\epsilon+\frac{\rho\left(1+\epsilon\right)}{1-\rho}>1+\epsilon+\frac{\rho\left(1+\epsilon\bar{\theta}\right)}{1-\rho}, \tag{D.7}$$

where the inequality comes from $\bar{\theta}<1$. Therefore, the single deviation would make E better off, and the conjectured MPE is thus not an MPE. The claim is thus proved.

Claim 8. If $0<\epsilon<(1-\rho)\left(1-\underline{\gamma}\right)$, then Conjectured MPE 3 will not be an MPE. Suppose $0<\epsilon<(1-\rho)\left(1-\underline{\gamma}\right)$, and consider E's choice of θ_{t+1} given $\gamma_t=1$ and $\theta_t=\underline{\theta}$. Since $\gamma_t=1$ is given, again, by Claim 1, E will always speak the truth and receive a payoff of $1+\epsilon$ in period t. On the conjectured equilibrium path, again, choosing $\theta_{t+1}=\bar{\theta}$ will lead to her dependence in period $t+1$ and, by Claim 2, her only being able to speak the truth when seeing a good state for R, which will happen with probability $\bar{\theta}$; moreover, by Claim 5, such dependence will persist in all future periods on the conjectured equilibrium path. Her expected payoff is thus, again,

$$1+\epsilon+\frac{\rho\left(1+\epsilon\bar{\theta}\right)}{1-\rho}. \tag{D.8}$$

A single deviation, i.e., choosing $\theta_{t+1}=\underline{\theta}$ only in period t, would, by Claim 4, lead to her independence and, by Claim 1, always being able to speak the truth in period $t+1$, again; but, coming back to the equilibrium path, she will choose $\theta_{t+2}=\bar{\theta}$, which will make her dependent in period $t+2$, which will make her only speak the truth when seeing a good state for R, which will happen with probability $\bar{\theta}$; after that, by Claim 5, such dependence will persist in all future periods on the conjectured equilibrium path. Her expected payoff would thus be

$$1+\epsilon+\rho\left(1+\epsilon\right)+\rho^2\cdot\frac{\left(1+\epsilon\bar{\theta}\right)}{1-\rho}>1+\epsilon+\rho\left(1+\epsilon\bar{\theta}\right)+\rho^2\cdot\frac{\left(1+\epsilon\bar{\theta}\right)}{1-\rho}=1+\epsilon+\frac{\rho\left(1+\epsilon\bar{\theta}\right)}{1-\rho}, \tag{D.9}$$

where the inequality comes from $\bar{\theta} < 1$. Therefore, the single deviation would make E better off, and the conjectured MPE is thus not an MPE. The claim is thus proved.

Claim 9. If $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, then Conjectured MPE 4 will not be an MPE. Exactly the same argument in the proof of Claim 8 applies here. This claim is thus proved.

Taking stock, by Claims 7–9, if $0 < \epsilon < (1-\rho)\left(1-\underline{\gamma}\right)$, then there will not exist any pure-strategy MPEs other than the one in Proposition 2. The proposition is thus proved. □