

I. Introduction:

“Force cannot, like opinion, endure for long unless the tyrant extends his empire far enough afield to hide from the people, whom he divides and rules, the secret that real power lies not with the oppressors but with the oppressed.” — Marquis de Condorcet¹ (1745-1794).

Twentieth-Century India lived under the kind of colonial administration that James Madison and Thomas Jefferson had rejected² — the kind that would have made John Adams angry³. And it did anger a great many Indians⁴. To the British, the Indian economy existed for the enrichment of Great Britain. Industry was for the profit of the English Midlands. Indian salt was to be managed for the benefit of Cheshire. India was an extractive state under British colonial rule that was not able to invest more in physical and human capital and use these factors efficiently to achieve a greater level of income. (e.g., Acemoglu, Johnson and Robinson, 2001; Acemoglu and Robinson, 2002; Banerjee and Iyer, 2002; Engerman and Sokoloff, 1997; 2000; 2002). History is nothing but an artificial extension of social memory⁵. In the view of that memory based model of bounded rationality (e.g. Mullainathan, 2002) and the new institutionalist view of history (e.g. North, 1990), history is crucial because history shapes institutions and institutions shape the economy. This proposition is further fortified by La Porta et al (1998; 1999; and 2000) who argued that the experience of colonization can have permanently lasting effect on the legal system of any country and through that on that country’s economic performance.

¹ Condorcet, J.A (1795) *Sketch for a History for the Progress of the Human Mind*. Connecticut: Hyperion Press, 1979.

² Bernard Bailyn (1967) *The Ideological Origins of the American Revolution*. Cambridge, MA: Harvard University Press.

³ Gordon S. Wood (1992) *The Radicalism of the American Revolution*. New York: Alfred A. Knopf.

⁴ Getz, Marshall J. (2002) *Subhas Chandra Bose: A Biography*. North Carolina: McFarland & Company.

⁵ Becker, Carl (1931) *Annual address of the president of the American Historical Association, delivered at Minneapolis. December 29, 1931*. Reprinted in the *American Historical Review*, Volume 37(2), p. 221-236

Individuals have only imperfect control over their memory. They are not able to learn everything that they would like to, mainly because it is too difficult for them. It is only possible to integrate new knowledge into one's memory by applying sufficient effort, time and resources. *Unlearning* various practices enforced by habits formed under colonial institutions, i.e. removing information from one's memory on colonial ways of organizing economic activities is more difficult to achieve. It is, for example, impossible to forget the information that the price of salt was fixed so artificially high by the colonial authorities that smuggling was profitable and this was often the only way many families could obtain the salt that they needed. One would be better off not knowing that smuggling was the only means for obtaining salt for their most basic consumption, but one could not choose to forget such utility enhancing information given their colonial circumstances. This "*retention effect*" suggests that there is a fundamental asymmetry between *learning* and *unlearning*.

Moreover, making an effort to get rid of a piece of information stored in our memory tends to have a *counterproductive* effect: it is rendered more vivid and therewith stored more effectively in our memory. The "*retention effect*" produces higher transaction costs in principal-agent relationships. In a colonial political economy the colonized as dependents of the colonizer, can retain as imprints activities that were prohibited. These retained psychological imprints of prohibitions could later be transformed into non-violent forms of subversive collective action against the authoritarian colonial regime, as demonstrated by Mahatma Gandhi; where a colonial government that strictly prohibited making salt from the sea by its alien subjects, often made it more difficult for them not to think of doing so, thereby creating an "*imprinting effect*" that had produced very high

transaction costs in the principal-agent relationship between the colonizer and the colonized, ultimately costing the British Empire in India its very existence.

Severity of economic repression gives rise to very high levels of cognitive dissonance (Akerlof and Dickens, 1982) and this necessitates strategies to reduce or cope with cognitive dissonance. Impossibility to forget may, given a history of imperialism, help people to behave rationally in the long run. In that sense, the failure to forget may in some respects be evolutionarily advantageous. If history is any evolutionary indicator of path dependence, then failure to forget the economic consequences of imperialism yielded strategic civil disobedience and eventually national independence. Non-forgetting is an instance of bounded rationality. (Simon 1957, 1982; Selten and Tietz 1980.)

II. **Salt and the Rational Fools⁶: Imperial Confiscatory Taxation and Indian Strategic Civil Disobedience — A New Behavioral Economic History**

Salt is essential to human life as it regulates the amount of liquid that can be held in the body. Without it people dehydrate. It is impossible to know just how many people died as a result of the exorbitant taxing and pricing of salt. As well as dehydration, salt deficiency contributes to people's inability to recover from many other diseases. Many deaths caused or aggravated by lack of salt would not be recorded as such. Although there is not a reliable estimate of how much salt an average Indian family would need, the estimates of what Indian families were able to afford, even in times without famine, were way below the minimum the British recommended for their own soldiers. This is evident from testimony of doctors working in India sending reports to Britain protesting at the salt deficiency of many Indian people.⁷ The price of salt was

⁶ Sen, Amartya, (1976-77), "Rational Fools: A Critique of the Behavioural Foundations of Economic Theory," *Philosophy and Public Affairs*, No. 6, 1976-7, pp. 87-109

⁷ Roy, Moxham (2001) *The Great Hedge of India*. London: Constable.

fixed so artificially high that smuggling was profitable and this was often the only way many families could obtain the salt that they needed.

A colonized person could have been given one preference ordering, and as and when the imperial extractive needs of the colonizer might have arose or changed, this was supposed to reflect the colonized person's interests, represent his welfare, summarize his idea of what should be done, and describe his actual choices and behaviour. Can one preference ordering for the colonized person do all these things? A policy of colonization thus described may be 'rational' in the limited sense of revealing no inconsistencies in the choice behaviour of the colonizer imposed on the colonized person, but if the colonizer has no use for these distinctions between different concepts of preference ordering, he must be a bit fool. The purely economic colonizer like Amartya Sen's purely economic man is indeed close to being a social moron⁸ (Sen 1977).

Before the British created artificial trade barriers for confiscatory salt taxation, India had affordable, readily available salt.⁹ While it has huge salt-less regions, with natural salt fields on both its coasts and huge rock salt deposits and salt lakes in between, India had an ancient tradition of salt making and trading. On the east coast of India is a salt-producing area known as Orissa, with a prefect natural sea salt zone along a tract that is 320 miles long and ten to sixty miles deep. The salt that was produced here was noted for its high quality and was considered by many to be the best salt in India, yet it was also inexpensive.¹⁰ This salt had an eager market in the neighbouring provinces to the West, shipped on the River *Mahanandi* and its tributaries. Merchants came to Orissa to buy salt

⁸ Sen, Amartya, (1976-77), "Rational Fools: A Critique of the Behavioural Foundations of Economic Theory," *Philosophy and Public Affairs*, No. 6, 1976-7, pp. 99.

⁹ Agarwal, S.C. (1976) *The Salt Industry in India*. New Delhi: Government of India Press.

¹⁰ Ibid.

or barter with products such as cotton, opium, marijuana, and grains, carried by oxcart from central India. Even the British in India traded in Orissa salt.¹¹ They needed large quantities of salt for the manufacture of munitions for their eighteenth-century wars with the French, and a significant part of the salt for their gunpowder came from Orissa.

Most of India, since ancient times, had a history of modest salt taxes.¹² In Orissa, the Maratha, the ruling caste of much of pre-British India, levied a small tax on salt transported commercially in the province. The trade was so extensive that they could earn a substantial profit on this moderate tax and avoid a higher one that would damage the competitive price of Orissa salt. In return for this source of revenue, they looked after the promotion and prosperity of the salt trade. Unfortunately, in the late eighteenth-century, Cheshire was increasing its salt production and aggressively hunting overseas markets. The empire was expected to provide these markets. Yet Liverpool salt could not compete with the price and quality of Orissa salt.¹³

In 1790, when the British requested permission to buy all the salt made in Orissa, the Maratha governor of Orissa turned down the offer, realizing that the British were trying to eliminate Orissa salt in order to maintain British salt at an artificially high price. But when the British had their offer rejected, they simply banned Orissa salt in Bengal.¹⁴

Since the border that Orissa shared with Bengal was a thick jungle, difficult to patrol, the first effect of the new ban was to create well-organized bands of salt smugglers. Inexpensive contraband salt from Orissa so flooded Bengal that the British salt still could

¹¹ Calvert, Albert F. (1919) *Salt and the Salt Industry*. London: Sir Isaac Pitman & Sons.

¹² Choudhury, Sadananda (1979) *The Economic History of Colonialism: A History of British Salt Policy in Orissa*. New Delhi: Inter-India Publications.

¹³ Calvert, Albert F. (1915) *Salt in Cheshire*. New York: Spon and Chamberlain.

¹⁴ Choudhury, Sadananda (1979) *The Economic History of Colonialism: A History of British Salt Policy in Orissa*. New Delhi: Inter-India Publications.

not compete there. In 1803, in the name of fighting contraband, the British army occupied Orissa and annexed it to Bengal.¹⁵

On November 1st, 1804, by proclamation, Orissa salt became a British monopoly. The private sale of salt was completely prohibited. Those who had salt in their possession had to sell it to the government immediately at a fixed price. The transport of salt was forbidden. Even provisioning a ship with enough salt for the crew during a voyage had to be done under strict British supervision. Within ten years, it became illegal for salt to be manufactured by anyone other than the British government. A system of well-paid informant was established to prevent clandestine salt trading.¹⁶ The British advanced money to the native salt workers against future salt production, and the native salt workers got deeper and deeper in debt and eventually were forced to work for the British producing salt to pay off their debt — virtual slaves to the British salt department.¹⁷

On March 12, 1930, Gandhi and approximately 78 male Indians set out, on foot, for the coastal village of *Dandi* some 240 miles from their starting point in *Sabarmati*, a journey which was to last 23 days¹⁸. Virtually every resident of each city along this journey watched the great procession, which was at least two miles in length.¹⁹ On April 6th he picked up a lump of mud and salt and boiled it in seawater to make the commodity which no Indian could legally produce — salt.²⁰

He implored his thousands of followers to begin to make salt wherever, along the seashore, "was most convenient and comfortable" to them. A "war" on the salt tax was

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ Jack, Homer A. *The Gandhi Reader: A Source Book of His Life and Writings*. Bloomington: Indiana University Press, 1956. p. 237.

¹⁹ Ibid. p. 237.

²⁰ Ibid. p. 240.

continued during the following weeks. Salt was sold, illegally, all over the sea-coast of India. A pinch of salt from Gandhi himself sold for 1,600 rupees (approximately \$750 at the time.) In reaction to this, the British government had incarcerated over sixty thousand people at the end of the month.²¹

Soon thereafter one night, when Gandhi was sleeping, he was apprehended at midnight by heavily-armed forces under a regulation of 1827. The effects of the salt march were felt across India. Thousands of people made salt, or bought illegal salt. This period is to be considered the apex of Gandhi's political appeal, as the march mobilized many new followers from all of Indian society and the march came to the world's attention. After Gandhi's release from prison he continued to work towards Indian independence, which was achieved in August, 1947, but *Dandi* was a key turning point in that struggle.

III. Identity and Cognitive Dissonance — Ethnic Capital Formation and the Logic of Collective Action

The construction of a nation or a homeland for an imagined community is a collective good in the sense that “other individuals in the group cannot be kept from consuming it once any individual in the group has provided it for himself.”²² The corollary to this general conclusion is that a collective good can be provided only if it is seen as a private good by the actor. A person’s identity or his sense of self is his private good (Akerlof and Kranton 2000). The collective action literature teaches us that situations characterized by collectively supplied benefits and privately incurred costs will

²¹ Ibid. p. 240-243.

²² Olson, Mancur (1965) *The Logic of Collective Action: Public Goods and the Theory of Groups*, Cambridge, MA: Harvard University Press. P. 35.

not motivate participation in collective endeavors. Therefore additional incentives are needed to move the potential participants into action. In other words, the leaders of an independence movement need to be able to present their objective worth pursuing for its own sake and be able to provide additional incentives simultaneously in the form of reputation enhancing private rewards. One particularly effective way to provide an individual with a reputation enhancing private reward is to supply an identity based ethnic reputational reward. Ethnic reputational rewards can be the basis for political exchange in collective action and investments in ethnic networks can subsequently serve as *ethnic capital* (Wintrobe 1992). The crucial feature of *ethnic capital* is the uniqueness of *ethnic identity* as a basis for network “membership.” To the extent that this criterion is used, entry and exit from the ethnic network is blocked for a generation. Since identity based *ethnic capital* cannot move from one group to another, it follows that competition among ethnic groups does not equalize returns among them. Consequently, differences in returns and therefore in incomes persists. If there are two distinct ethnic groups, one representing the colonizer and the other representing the colonized, the income differential between the colonizer and the colonized creates *cognitive dissonance*²³ for the colonized. Since there can be no competition between the ethnic group of the colonizer and the ethnic group of the colonized to equalize returns, the social and political value of the colonizer’s identity based ethnic capital will always remain artificially and discriminately higher than the social and political value of the ethnic capital of the colonized, the economic consequences of who’s *cognitive dissonance*²⁴ cannot be ignored by any other means but subversive collective actions of strategic non-violent forms.

²³ Akerlof, George A. (1982) and Dickens William. “The Economic Consequences of Cognitive Dissonance” *American Economic Review* Vol. 72. pp. 307-317

²⁴ Ibid

In the communitarian ‘constitutive’ conception of an *ethnic community* (Sandel 1998, Sen 1999) identity comes before reasoning for choice: “the self came by its ends, not by choice but by reflection, as knowing (or inquiring) subject to object of (self-) understanding.”²⁵ Therefore, “a person’s *identity* is something he or she detects, rather than determines.”²⁶ Social organization can then be seen as attempts to “create opportunities for men and women to give voice to what they have *discovered* about themselves and the world and to persuade others of its worth”²⁷ If the social organization of the British Empire in India can be seen as attempts to create opportunities for English men and women to give voice to what they believed to have *discovered* about themselves and the world around them — a “civilizing” belief that England should assist in the development of “backward peoples” towards greater refinement, just as the early Romans were believed to have brought civility to England,²⁸ it became a necessary cognitive dissonance reduction strategy²⁹ of the colonized people to invest in ethnic networks to produce identity based ethnic capital for distribution as private reputational rewards within the members of their ethnic community. This special reward was contingent upon actual participation in the independence movement. Participation, in short, is a necessary and sufficient condition for being rewarded with an extra private reputational good — an extra reputational benefit to flow to a participant who joins the collective action movement. A potential participant who does not join the independence movement receives no extra reputational benefit. Such selective incentives in the form of

²⁵ Sandel, Michael (1998) *Liberalism and the Limits of Justice*, 2nd ed. Cambridge: Cambridge University Press. p. 150. Quoted by Sen, Amartya K. (1999) *Reason Before Identity*. Oxford: Oxford University Press. p. 17.

²⁶ Ibid.

²⁷ Crowley, B. (1987) *The Self, the Individual, and the Community*. Oxford: Oxford University Press.

p. 295 Quoted by Sen, Amartya K. (1999) *Reason Before Identity*. Oxford: Oxford University Press. p. 17

²⁸ Colley, Linda (1994) *Britons* New Haven: Yale University Press. p.77

²⁹ Akerlof, George A. (1982) and Dickens William. “The Economic Consequences of Cognitive Dissonance” *American Economic Review* Vol. 72. pp. 307-317

reputational benefits are always defined as private goods or side payments that are available to potential participants who participate in the independence movement. Participants in an independence movement thus receive multiple payoffs for their contributions: divisible and excludable private reputational rewards as well as nondivisible and nonexcludable public goods.

IV. The Model:

Consider a group of N symmetric players (Indians of Colonial British India).

Benefits and costs depend on the number of active (nationalist-Indian) players:

When there are n participants, every player gets gross benefits $b(n)$, $b > 0$ participants incur costs of $c(n)$ each.

Thus, every participant gets the payoff: $p(n) = b(n) - c(n)$.

Each non-participant/free-rider/shirker gets $s(n) = b(n)$.

The decision whether to participate or to shirk depends of course on what the others are doing. They consist of n participants and $(N - 1 - n)$ shirkers.

Thus if you shirk you get $s(n)$ and if you participate you get $p(n + 1)$.

Implying you shirk if $s(n) > p(n + 1)$, you participate if $s(n) < p(n + 1)$

We can now construct a Collective Action game in general form for the 2 players' case:

	PARTICIPATE	NOT PARTICIPATE
PARTICIPATE	$p(2), p(2)$	$p(1), s(1)$
NOT PARTICIPATE	$s(1), p(1)$	$s(0), s(0)$

Where the total payoff for the Colonial Indian society in terms of collective welfare would be: $T(n) = n \cdot p(n) + (N - n) \cdot s(n) = Ns(n) - n[s(n) - p(n)]$

Now Consider the Right hand side:

1st term: increasing because $s = b > 0$

Therefore, it all depends on the 2nd term, i.e., a shirker's or free-rider's extra pay-off:

$$[s(n) - p(n)]$$

If it is small and does not increase heavily, welfare is maximized at:

$$n = N \Rightarrow \text{Prisoner's Dilemma I, Chicken I (Assurance).}$$

If it is heavily increasing, welfare is maximized at:

$$n < N \Rightarrow \text{Prisoner's Dilemma II, Chicken II}$$

Observe:

- 1) For all $n \leq N - 1$: $s(n) > p(n + 1)$, shirking from participation is the best response independently from n , i.e., Nash Equilibrium at $n = 0$
- 2) $s(0) < p(n)$: everybody contributing is strictly preferred \Rightarrow Prisoner's Dilemma.
- 3) Yet, collective welfare not necessarily max at $n = N$,
since it depends on $T(n)$ if the shirker's extra payoff is small and increases not too heavily \Rightarrow **Prisoner's Dilemma I, otherwise Prisoner's Dilemma II.**

Now consider the Chicken case:

Observe:

- 1) For small n : $s(n) < p(n + 1) \Rightarrow$ participation is the best response.
 - 2) For large n : $s(n) > p(n + 1) \Rightarrow$ shirking from participation is the best response.
- With (1) and (2) together, Nash equilibrium is at $n > 0$.
- 3) $p > 0$ is not necessary.
 - 4) If collective welfare is maximized at $n = N$, then **Chicken I.**

5) Yet, if collective welfare is maximized at $n < N$, then, $n = n$ only accidentally.

Minor problems:

- 1) Intersection is not necessarily at an n .
- 2) n separates shirkers and participants.
- 3) The problem of the 2-player case remains: Who are the chickens?
- 4)

Possible solutions:

- (1) Leadership by strong social, religious and political charismatics such as Mahatma Gandhi.
- (2) The strong players (nationalist-Indians) participate, while the weak players (weak-nationalists) ride free.

Observe:

1. for small n : $s(n) > p(n + 1) \Rightarrow$ shirking from participation is the best response.
2. for large n : $s(n) < p(n + 1) \Rightarrow$ participation is the best response.
3. Taking both (1) and (2) in consideration, there are 2 Nash equilibria,
at $n = 0$ and at $n = N$.

Yet, how likely is the good equilibrium in large groups?

- 1) If N is large a single player decision has only very little effect on overall payoff:

$$p(n + 1) \approx p(n)$$

$$\text{But, } p(n) = b(n) - c(n) < b(n) = s(n)$$

i.e. shirking from participation is always the best response.

Expect for every game: a prisoner's dilemma if N is sufficiently large.



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