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OLD WOLF, NEW WOOL SUIT: INDIA, IT, AND THE LEGACY OF COLONIALISM

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Abstract

Information technology forms an intrinsic part of the current global imagination, a worldview that has recently been challenged. The challenge, however, has not been extended to IT, which is seen, for the most part, in a positive light. We use actor-network theory to explore whether there might indeed be some problematic aspects of global IT that deserve the attention of the IS community. By concerning ourselves with the mobility of IT through both time and space, we investigate IT transfers related to India and their links to the colonial era, considering how IT might unobtrusively carry in it assumptions and practices that derive from that epoch.

1 INTRODUCTION

Especially since the protests launched by activists against the World Trade Organization (WTO) in Seattle in 1999, the liberationist rhetoric of globalization has been challenged, both in terms of its promise in (gradually) ending the travails of the world and, paradoxically, for its role in (not so gradually) creating those problems. Yet, one of its most indispensable tools, information technology, appears to have evaded this scrutiny. Such technology plays a substantial part in shaping both globalization and our world, but it is not called upon to face the critics; indeed it is celebrated as an example of the *success* of globalization, as in India. It is not hard to understand such an upbeat perspective in a world that tacitly sees IT as a positive influence, a world that clearly needs, in the face of war, poverty, and environmental disaster, more than a modicum of hope. The danger, though, is in the possibility that this hope is being built on potentially untenable premises and is energizing action that might actually compromise that very hope. We would like, in this paper, to question this uncritical approach, to examine the possibility that rather than showing the success and hope of globalization, critical aspects of the manner in which we spread IT around the world might actually intensify its detrimental effects.

We attempt to make our case historically, to show how the *trajectories* of past practices might lead in directions that do not sit comfortably with our visions of a desired world. This is not to suggest that these trajectories are inevitable but rather that they continue under their own inertial forces, too familiar for us to take notice and to elect to change them.

The past practices to which we refer are those of colonialism. We attempt to demonstrate how the means by which colonized communities were disciplined and subjugated in an era that we currently see as a tainted stage in international relations might be manifested in the very (IT) tools we see as the harbingers of a promising *new* world. Shedding light on those practices, however,

is insufficient; we also need to theorize the trajectory that has enabled these practices to remain with us and to articulate the danger it poses. To assist our theoretical purpose, we take the liberty of borrowing from and, in the spirit proposed by Law (1999), stretching actor-network theory (ANT).

With these objectives in mind, the next section looks briefly at ANT and is followed by two sections that outline colonial practices and show their connections to present day IT. The last section attempts to show the dangers posed by these connections and the possibility of doing something about them. We build our argument around the particularities of British colonialism in India but attempt also, where we can, to link to related circumstances. We do not attempt a generalization but would like to suggest tentatively that the conditions that obtained in India and those that exist today might find parallels elsewhere; to seek these parallels is the challenge that we hope might be taken up by the reader.

2 ACTOR-NETWORK THEORY

We intend for our purposes to appropriate some of the rich vocabulary of actor-network theory to theorize how a particular state of affairs came to be and was sustained. The liberty we take is in avoiding its use as a means of effecting a close reading of specific instances of science and technology in favor of a broad reading of historical trajectories.

ANT derives primarily from the work of Bruno Latour (1987, 1990, 1999), Michel Callon (1980), and John Law (1991, 1999), and is focused on understanding the conditions of the present by examining the actions and accidents of history. It is “a ruthless application of semiotics” (Law, 1999, p. 3) that considers the role of *actants* (ANT eschews the word actor in favor of actant to denote that entities could be *human* or *nonhuman*) interacting within *networks* to negotiate a mutually acceptable *truth*. These truths gain credibility through the creation of alliances and the *enrolment* of actants for whom the truths are *translated*, accounting for diverse interests and relative positions of power. If successfully and successively translated (i.e., each “wave” of new actants accepts them as true), these evolving truths take on the air of reality for the entire *actor-network* (all of the diverse actants that have been enrolled), serving as “givens” that form the basis for future action. In these uncontested forms, these truths acquire the status of *black boxes*, which hide from future view any disputes that might have occurred in their establishment. The degree of *irreversibility* refers to the extent to which a black box might be ‘opened’ in order to go back to a point where the truth was still in question. The box itself is not static. To remain as such, it must remain in circulation and influence action.

The actor-network may *delegate* to a spokesperson (either a human or nonhuman) the right to represent the network. In Latour’s (1999) example, the actor-network that has been constructed to ensure that speeding automobiles slow down in a busy area delegates to a speed-bump (a nonhuman) the task of slowing motorists down. The original *goal* of slowing down has been *displaced* through translation into one of “avoiding damage to the car.”

As our purpose in this paper is to attempt to establish a connection (between current and colonialist practice), actor-network theory serves us well. It is a theory of connections and continuities which we hope to show works as effectively with broad brush strokes as it does with its more familiar meticulous analyses. Its concern with the idea of reflexivity also helps us promote the idea that it is useful to reflexively monitor our everyday involvement with IT, especially in its global deployment. And it helps us argue our case without resorting to the rhetoric of domination and oppression that might characterize explanations founded in critical theory, neo-Marxian approaches, or, to a lesser extent, postcolonial theory; ours is an attempt only to point to certain phenomena and encourage reflection about them.

We have tried to introduce some of the vocabulary of actor-network theory. It is obviously far richer in detail and explanation than we can represent here. Readers are referred to far more detailed uses of the theory in the IS field (Bonner 2001; Walsham and Sahay 1999). In what follows, we will use this vocabulary to theorize the movement from colonialism to modern-day globalization and IT.

3 TECHNOLOGY AND COLONIALISM

Technology, represented by a ubiquitous array of nonhuman actants, played a decisive role in the colonial enterprise in two quite distinct ways that bear upon this paper: as the medium of and impetus for *deindustrialization* (Pacey 1991), the gradual disappearance of indigenous industry as colonization crept into being, and as a means of keeping the colonized populace in check (Headrick 1981).

3.1 Deindustrialization

Pacey (1991) points to deindustrialization as the reason for the disappearance of a variety of previously strong industries, like silk manufacture and shipbuilding, from India in the seventeenth and eighteenth centuries. This phenomenon points to the fact that colonization was always, at heart, an economic enterprise (Brantlinger 1996; Reinsch 1902), as evidenced, for example, by the replacement of fine Indian silk with cheaper manufactured cloth from England.

To put deindustrialization in perspective, though, we need to consider Pacey's account of what it replaced: technological dialogue. Throughout history, thriving societies have developed "technology complexes" (Pacey 1991, p. 29), ways of advancing technologies from within as well as through *technology transfer* from other societies. Pacey cautions us, however, that "the deficiency of this phrase [technology transfer] is that it implies a process in which the recipients of a new technique passively accepted it without modification. The reality is that transfers of technology nearly always involve modifications to suit new conditions, and often stimulate fresh innovations" (1991, p. 51). This give-and-take is *technological dialogue*.

Technological dialogue implies both the dynamic nature of technical know-how and the autonomous nature of the communities involved. There have been conquests throughout history (Pacey 1992) that have decisively stifled autonomy, but where this has happened, the conquerors have generally *settled* in the territories they have overwhelmed. As a result, their everyday interests have been translated on the basis of their new domiciles and become coextensive with the interests of the conquered, and imported technologies have been adapted to their new environments (Pacey 1992). Not so for European colonialism. While there were several settler colonies (e.g., Australia, Canada), the bulk of colonization was for *exploitation* (Reinsch 1902), with no intention on the part of the citizens of the colonizing country to settle in the region. There appears to have been little concern, therefore, to engage in technological dialogue: the technologies of the colonizer seem to have been unquestioningly accepted within the colonial actor-networks and promoted as "best," not least because of their economic potential.

We do not aim to suggest that foreign technologies were merely foisted on an unsuspecting public during the several centuries of colonialism. Keeping in mind that wherever power is exercised there is invariably resistance (Kendall and Wickham 1999), the technology brought into the country was certainly resisted in India, most famously by Mohandas Gandhi during the surge toward independence (Brantlinger 1996). Moreover, technologies were invariably reinvented for local use, much as they are today. Indeed, such translation would appear to cast some doubt on Pacey's (1991) thesis of deindustrialization and the stifling of technological dialogue. Its validity, however, is underscored by some of the black boxes that were constructed at the time. As Pacey notes,

Indian techniques which a few years earlier seemed remarkable could now be equaled at much lower cost by British factories. India was then *made to appear* rather primitive, and *the idea grew* that its proper role was to provide raw materials for western industry...and to function as a market for British goods (p. 129, emphasis added).

Certain modes of thinking about India and its industry came to hold sway with the help of assertions produced and reproduced by actors in the network.

The actor-networks in question were fashioned through the enrolment of Indian "elites." As Symonds (1966) notes, "To Macaulay, the main object of British educational policy was 'to form a class of interpreters between us and the natives we govern', a class of persons Indian in blood and color but English in tastes, in opinions, in morals and in intellect" (p. 17). Kaye (1853) cites a declaration made by Governor-General William Bentinck, in 1835, that, "the great object of the British Government ought to be the promotion of European literature and science among the natives of India, and that all the funds appropriated for the purposes of education would be best employed on English education alone" (p. 595). Such practices and attitudes were translated into the idea that British technology (whether or not manufactured in India) was clearly the best choice for India. There was a displacement of meaning from that of *best choice*: collaboration with the British was shown to be *profitable*, in an economic sense, for the individuals often hand-picked by the British for their opinion leadership (James 1998; Symonds 1966).

We should not conclude that the colonizers were attempting anything as grand as deindustrialization. There was an economic mandate, especially prior to the 1857 uprising when the British East India Company was the primary colonizer. They also appeared to have had their doubts about colonization itself, but were able to put such doubts to rest; Lucas (1915) asks, "What business had the English to intrude into other peoples' lands?" And answers, "If the English and other people had not intruded into lands which did not belong to them, the world would never have gone on at all. History has been made, nations have been made, civilisation has taken the place of barbarism simply by the process of intrusion" (p. 41). Informed by this sense of superiority and right, and convinced by the idea that the "natives" needed help, the project of the colonizers slowly enrolled the colonized and entire industries began to disappear.

3.2 Information, Technology, and Colonial Control

Headrick (1981), in *The Tools of Empire*, sets out to show the interconnectedness of two great events of the nineteenth century: “One was the progress and power of industrial technology; the other was the domination and exploitation of Africa and much of Asia by Europeans” (p. 3). To these we can add, without excessive dispute, a third: commerce and the logic of the market (McMurtry 1998). The capitalist enterprise formed the backdrop against which colonialism unfolded. Reinsch (1902) notes how English control of India, in the sense of control of “the wealth of the country,” was not quite as complete as in “Jamaica or Ceylon... With the construction of railways and with the development of industries under British initiative, India is, however, becoming more and more a colony in the technical sense of the term” (p. 22).

Headrick demonstrates how industrial technology actually made colonialism possible “by making it suitably cost-effective in the eyes of budget-minded governments” (1981, pp. 11-12), constituting an example of the delegation to nonhuman actants of crucial functions in actor-networks. Technologies, by their very nature, are especially easily black-boxed: as they pass into regular use, they become invisible or, in Heidegger’s terms, ready-to-hand. Just as we take little notice of our climate control systems, the technologies of imperialism—guns and gunboats, medical techniques, steamships, railroads, and the telegraph—disappeared from view as instruments of control.

Technologies of information were also brought into play (and duly black-boxed) in the establishment of colonial governance. To facilitate “action at a distance” (Latour 1990), the only real means for European colonial administrations of governing territories that by 1914 accounted for 84 percent of the earth’s land area (Headrick 1981), large numbers of indigenous people were employed and enrolled in the colonial endeavor. Robb (1992) notes how, “The British depended upon the reliability of the huge numbers of Indians whom they had to employ. But they claimed repeatedly that subordinates... were bound to be unreliable and oppressive” (p. 41). Information gathering was a key function within this system, to be processed at what Latour (1987) refers to as “centres of calculation.” The India Office in London maintained detailed records of communication with different parts of the empire and had “prepared printed forms and a circular to governors instructing them to have the forms filled out by all the individual office holders in the colonies” (Young 1961, p. 34). Robb notes how, “Information flowed in and business was disposed of according to established routines within each office. A file or report was logged at each stage... tasks left written trails which could be traced by the supervisors” (pp. 34-35).

Implicit in everyday management was the use of English, which served to distinguish between those who were “the cream of society” (Gopal 1963, p. 240) and entrusted with administrative responsibilities and those among whom “the use of vernacular languages was seen as a disability” (Robb 1992, p. 42). So suspicious were the British of vernacular languages (Leutner 1891) that they took special care to maintain a record of books and documents produced in local languages. Darnton (2001) describes the seemingly innocuous clerical activity of documenting and compiling databases that seemed utterly harmless until they were used years later to locate and punish members of the freedom movement.

All this activity reflected a quite unremarkable aspect of colonial rule. Even as the Indian independence movement gathered steam, the objections raised were against, first, the broad idea of being ruled by foreigners and, second, the coercive nature of the colonial yoke (James 1998). There was no overt challenge, though, to the mundane, informational nature of colonial government, which had congealed into a particularly enduring black box and to which the governed masses seemingly submitted without rancor.

Equally unremarkable at the time was the census, which owed its legitimacy, in part, to the informational machinery of colonial government. As “official returns and reports became routine... enumeration and documentation were extended to society at large, encouraging and coercing it as well” (Robb, 1992, p. 293). In trying to translate this British idea into local practice, “the bureaucracy had to face peculiar difficulties when ignorant people entertained misgivings about it” (Gopal, 1963, p. 247). However, due to its official nature as a government procedure and its portrayal as an innocent idea well accepted in America and Britain, its translation from a black box at the office level to a societal imperative was achieved smoothly. However, as Appadurai (1997, p. 117) points out, in Britain the census “[operated] within a framework of commonsense classifications shared by officialdom with ordinary people,” and therefore, “did not have the refractive and generative effects that it did in India,” where it served as a means of classification and separation that contributed to the divisive communal politics of independence and its aftermath.

The census helped the colonizers keep the colonized population in check, but the role of local elites was indispensable, as was that of ordinary people, all of whom bought into the colonial story for reasons of their own, thereby making the black-boxing of exploitative colonial practices rather easy. Also enrolled in the actor-network was the black box of the Hindu caste system that helped the British to “sell” the usefulness of a divisive system of administration.

The informational practices of governance existed in a mutually reinforcing actor-network that also included nonhuman actants in the form of a range of information and communication technologies, from railroads, steamships, and the telegraph to more mundane typewriters, filing systems, and carbon paper (space constraints prevent us from exploring these in detail). Also implicated in the network were the other elaborate colonial institutions: military, education, and law. Education was in particular geared toward the creation of a compliant culture which would effect translations of colonial initiatives into beneficial local agendas. It was this ensemble of relatively innocuous institutionalized practices, all of which reinforced and made possible each one, that eventually passed into local hands as the legacy of colonialism.

4 INDEPENDENCE?

The withdrawal of colonial forces symbolized an important victory for fighters for independence in India and elsewhere. Far more remained, however, than was withdrawn: nonhuman actants (urban and technological infrastructures), and invisible black boxes: the logic of the market (McMurtry 1998), the administrative and judicial apparatus, the anglicized system of education for the higher classes (Kaye 1853), human actants steeped in British ways (James 1998), and the idea that decolonized countries had a long way to go to “catch up” with the West. These remains served partially to fill in the void left by the withdrawal of the colonizers. Direction from the outside, though, was something the newly independent countries had known for generations, so when President Truman of the United States stepped in to announce his development agenda in 1949, proclaiming, “We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas” (cited in Ullrich 1992, p. 275), the new Government of India, among others, proved easy to enrol into the revamped actor-network.

The new mantle of the *developing country* was accepted without resentment as a truth in the revamped network and the Bretton Woods institutions (the World Bank and the International Monetary Fund) proceeded to set the agendas “at a distance” for numerous such countries. The faint hope that decolonization might bring with it a new autonomy and perhaps the basis for technological dialogue died unnoticed as aid was made contingent on developing countries adhering strictly to externally imposed agendas.

Interestingly, in India, there was at least partial recognition of the extent to which colonial control and its attendant problems for the populace had been based on the logic of the market and on Western technology (Brantlinger 1996; Gandhi 1997), thanks especially to the philosophical basis upon which Gandhi’s objections to colonialism were built. As a result, India revealed to a small extent the reversibility of the black box of the market and chose to eschew the free market model promoted by the West. The position it chose, though, was hardly autonomous, as it found itself enrolled in the actor-network of socialism which, while in opposition to capitalism, was equally committed to “development of the forces of production” (Ullrich 1992, p. 279).

Technology sustained “the religion of progress” (Ullrich 1992, p. 276) and a strong bias developed toward technical education, as evidenced by the development of numerous regional and federal engineering institutions. Technology became impossible to question as an instrument of domination; it had become a black box of daunting irreversibility, the colonial contents within lost to sight. To be sure, the education was of high quality, a factor that had unfortunate consequences in that large numbers of graduates decided to emigrate, for the most part to the United States. The diaspora from India (Bhattacharjee 1992), especially the section that originated from the educated classes, played its part in sustaining the cult of Western technological (and cultural) superiority through its broad appropriation of the ethos of science and technology prevalent in the West and by transmitting this ethos through the strong ties many people maintained with their home country.

For all its promise and hype, the development era came to be seen as a failure (Sachs 1992). In the late 1980s and early 1990s, the government of India, disenchanted with increasing poverty, under pressure from the increasingly global network dedicated to the free market, and lured by the promise of prosperity and capital flows, began to liberalize its markets. Capital streamed in on the back of a dramatic increase in the multinational presence. Information technology, hitherto relatively subdued if steadily growing, burgeoned both in terms of home and corporate use. India’s software industry, peopled by graduates of the country’s outstanding system of technical education, grew in size and international prestige (Aggarwal 1998). Government policy veered strongly in the direction of nurturing this newfound capability (Walsham and Sahay 1999). This side of the picture suggests that India had “arrived.”

It might be instructive at this point to pause and take stock practically and theoretically. On the practical level, it is fairly clear that India’s poor were not along on the same ride. Indeed, there is no satisfactory answer to Black’s (2001) question: “After 50 years of grand-slam development, why is India’s poverty more acute?” (P. 10). Still, there might be the temptation to suggest,

however unconvincingly, that there will be a trickle-down effect, that we are on the right track. The World Bank (2001) reflects this optimistic spirit:

There is an opportunity to make real inroads into poverty in the next 10-20 years, and to bring the benefits of globalization to all. The growth prospects for developing countries are strong. . . . In addition, *technology offers unprecedented opportunities for catch-up by poorer countries*, although it also carries risks for those on the wrong side of the digital divide (p. 2, emphasis added).

Clearly, India and other “poorer” countries had begun to question the development project (Sachs 1992), but for its (lack of) outcomes and, eventually, for its centered forms of control (e.g., the high-handed approaches of the World Bank and International Monetary Fund), rather than for its espoused goals of prosperity and technological parity with the West. Prosperity we can obviously let stand as a useful human objective, even if we must first restrict ourselves to imagining basic subsistence. Technological parity, though, has been enshrined in a black box that originated in colonial times and privileges the technological superiority of the West. An important translation that occurred following independence, implicit in the very constitution of the development project, was that the formerly colonized countries could indeed aspire to the technological sophistication of the West. We have rarely seen, however, explicit or implicit reference to the richer countries aspiring to emulate the technologies or technological reinventions of the poorer ones, negating the possibility of technological dialogue between autonomous participants; the developing country is always the receiver, the less privileged in the relationship.

More troubling, however, are the other black boxes that go unnoticed in the euphoria. Multinational companies, who have come to exert a major influence in India in recent years, use information technology to control local operations from afar (Broadbent and Butler 2000; King and Sethi 2001). Like the British colonial rulers, real control lies at centers of calculation in metropolitan locations. That the control is now delegated to the technology rather than to local colonial functionaries makes it difficult to discern even as it makes that control all the more effective. With software such as R/3 from SAP AG, a set of “tightly interwoven programs . . . that come together as a powerful network that can speed decision-making, slash costs, and give managers control over global *empires*” (Edmondson et al. 1997, pp. 41-2; emphasis added), control of a magnitude that would have been the envy of the colonizers is achieved. An ensemble of nonhumans is brought into play to achieve this control. Sophisticated telecommunications technology has taken the place of the telegraph, the latest database technology stands in for Darnton’s (2001) painstaking clerks, and local operatives lay bare their every operation as they take the place of the “unreliable subordinates” of colonial times described by Robb (1992).

This “colonial-esque” control at a distance is not the only manifestation of a continuing imperial impulse. The denizens of India’s software industry, ironically working in the best traditions of Western technology, produce outstanding products and gain (and occasionally lose) value on Indian and Western stock exchanges. The irony is that this industry, for all the dignity it confers on the country, produces its software almost exclusively on the basis of Western designs (Aggarwal 1998; Heeks 1999), producing technologies for the benefit of Western and pseudo-Western markets. While such an approach is undoubtedly profitable and a means of sustaining the global division of labor (Castells 1996) crucial to the globalization project, it reveals a paucity of autonomy within the global pecking order. Rather than reinventing technologies to meet the needs of local situations, as used to occur within the technology complexes of the region centuries ago, the strongly export-oriented industry (Heeks 1999) reproduces the deferential attitude toward Western technology that is the legacy of colonialism. There are certainly significant counter-examples, such as that of the affordable “Simputer” developed in India (Rao 2002), but the prevalent sense is that of a dependent industry.

5 WHAT’S WRONG WITH THIS PICTURE?

We hope we have demonstrated that the *trajectory* that has led to the present day confers a problematic tinge on certain aspects of the excitement about IT. Certainly, there are aspects of the current situation that yield hope, such as the raw potential of IT, the possibility of technological dialogue occurring on a large scale, and the ready acknowledgement that the attitudes that held up colonialism are unacceptable today. Indeed, it is to this last perspective that we address ourselves in this forum: our hope is that by theorizing IT use in “peripheral” economies such as India in the manner we have done, we might have occasioned some reflection amongst our colleagues and, therefore, created the potential to view future encounters differently. It is on the basis of these elements that we will try to envision an alternative future.

First, let us complete the picture we are drawing. There are two primary reasons for concern, both rooted in contradictions, corresponding directly to the ideas of deindustrialization and colonial control presented earlier. What we are missing today is

technological dialogue; as a result, many areas of the world are not able to develop their technologies in concert with their local circumstances. Local problems, especially as they relate to poverty and the natural environment, are possibly not being addressed most effectively in spite of a worldwide desire that this should occur (we might take as an example the potential for novel and contextually attuned uses of IT represented by the ongoing challenge in the management of water resources in India [Chatterjee 2002]). This is the first contradiction. The second one takes us back to the reasons for ending colonialism. Ostensibly, those communities that chose to fight that system did so for their own dignity and their belief in their own ability to run their affairs. Yet, while dignity appears to have been regained, it may be, at least for some, built on a shaky foundation, one that ultimately reveals that the decision makers lie beyond their borders and have delegated control to a technological ensemble. We see this, too, as a contradiction.

How might these contradictions be resolved? We suggest that the first step in any resolution is to be able to view things differently, to be able to understand how seemingly innocuous and even helpful activities might actually have detrimental effects. This first step is all we are trying to encourage. Beyond that lies dialogue. We would like to think that it is indeed possible for countries such as India to regain the autonomy necessary for technological dialogue, that information technologies, with their raw potential and infinite possibilities can be reinvented in ways that benefit local situations, potentially by being reconstituted where possible as a part of the “civil commons” (McMurtry 1998, p. 399).

No doubt there are people who benefit from existing arrangements, making change daunting. We make no attempt to lay blame; indeed, we concede to Lucas (1915) his point:

Right and wrong are always right and wrong, but they are more right or more wrong in proportion to the stage of civilization which has been reached. All nations have done evil deeds; but, in condemning what was done in the past, it is right to remember that the men of the past did not sin against the light to the same extent as if the deeds had been done here and now (p. 2).

All we suggest is that we avoid perpetuating in the present day what we have agreed was wrong about the past.

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