Displacing Creativity:
Artists, Space Scientists and Audience-Led Television in 1970s India

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Abstract

From August 1975 to August 1976 the Indian space agency's world-leading Satellite Instructional Television Experiment, known as SITE, broadcast to 2,400 villages across the country. This early project of the Indian Space Research Organisation (ISRO) defined a societal remit still considered the formational imaginary behind the space agency's range of remote sensing and planetary activities. The paper focuses on a brief span of time following SITE when opportunities opened for village residents to take control of the media, and this came about in part through initiatives in which creative practitioners working with the space agency introduced methods of co-production. The shift in creative agency from producers to audiences carried radical possibilities for social mobility and locally determined, rather than state-led, development initiatives. The purpose of this short paper is to highlight how creativity coincided with audience-led innovation. Opportunities for audiences to use the technical equipment opened as creative methods of co-production became more commonplace, such that innovation reflected the cultural values, or cognitive matrix, of the audience. Although the shift in agency from producer to audience was unprecedented, it was swiftly suppressed when the national satellite broadcast system INSAT finally became operational in the 1980s, in spite of—or perhaps because of—this flourish of social innovation. Applying the concept "cognitive innovation" to this context foregrounds the limited opportunities available for rural television audiences to use the technology instrumentally for their own purposes. Displacing creativity, by dismantling the project and putting a halt to its emerging methods of co-production, was a way of delinking the audience from the

technology and thereby imposing a different order. By indicating how creative activity accesses cognitive innovation, the paper introduces the notion of "displacing creativity" as a transferable measure of agency. It argues that where creativity is displaced, crucial mechanisms by which subalterns gain agency to act and to innovate are lost.

Keywords: audience-led broadcasting; cognitive innovation; creativity; Satellite Instructional Television Experiment; television.

Introduction

From August 1975 to August 1976 the Indian space agency's world-leading Satellite Instructional Television Experiment, known as SITE, broadcast to 2,400 villages across the country via an ATS-6 satellite loaned by NASA. This early project of the Indian Space Research Organisation (ISRO) defined a societal remit still considered the formational imaginary behind the space agency's range of remote sensing and planetary activities. The experiment aimed at creating a model of rural community broadcasting and communication that could be rolled out nationally once India had its own INSAT satellite system in place for direct broadcast television. The entire project lasted over a decade with the planning stages beginning in the late 1960s and a smaller scale pilot in the district of Kheda, near Ahmedabad in the northwestern state of Gujarat, extending through to the early 1980s. It was anticipated that the satellite network would revolutionize the dissemination of information and become a key development tool because it linked settlements with minimal infrastructure to national and global transformations.

The concept "cognitive innovation" is allied to "creative activity" in the way both presuppose an agency to add, adapt or contribute.[1] The aim of this short paper is to indicate the involvement of creative practitioners whose methods and motivations carried with them the aspiration to open up the creative agency of audiences. Although some documentation exists of the involvement of staff and students from the National Institute of Design (NID) in Ahmedabad and the National Film and Television Institute (NFTI) in Pune (Seminar, 1978), the important role of creative interventions is absent from recent historiographies charting the significance of SITE in the Indian space program (Rajagopal, 1993; Harvey, 2000; Siddiqi, 2015). The research for this article (and a fuller account in process) is the result of a year spent in Ahmedabad, the epicenter of the project, gradually gathering together the many threads of the narrative from archives and original participants, who revealed the

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[1] Gummerum and Denham (2014) give a powerful description of the potential of the concept as an "integrative concept that recognises the fundamental links between the innovator, the innovation, the contextual challenges and consequential reverberations through society" (p. 586). While this potential was available to the technicians and managers of SITE, for audiences this transforming potential remained out of reach during the one-year project.

nuanced, serendipitous and often tactical ways that creative practitioners integrated with the work of ISRO scientists. Similar to my own experience as an artist collaborating with ISRO scientists (Griffin, 2012), roles, perspectives, methods, expectations and aspirations of the interdisciplinary teams merged in unexpected ways.

The following outlines how, firstly, despite its innovation, the technical architecture of the one-to-many satellite broadcast was mimicked in a similarly top-down approach to program making during the one-year SITE project. The top-down approach restricted the agency of audiences who had no tangible connections to the media. Secondly, how the methods of creative practitioners fuelled the ground-up approach to program making that developed later. Thirdly, some of the reasons the project was abruptly dismantled indicate why cognitive innovation—as the agency of audience to think through what they wanted to appear on their television screens and produce it—was perceived by the state as risky and counterproductive. In conclusion, the paper indicates that the methodology of opening up creative encounters with science and technology in postcolonial contexts exposes delimited agency and where claims of participation are weak. Displacing creativity, in the example used in this paper, was a way of de-linking audiences from available opportunities to use new technologies that had appeared by chance in their neighborhoods. On a larger stage, the de-linking of cognitive innovation from participation that occurred at this significant moment in India's histories of technological innovation continues to haunt the rollout of state-led large-scale technological systems, driven by a societal rhetoric based on questionable assumptions.

Top-Down Architectures of Space Technology and Media Production

In terms of the geopolitics of the Space Race, SITE was hugely innovative in that it inverted the notion that space technology should be used for competitive exploration of outer space for political gain. Instead, India found political gain in using space technology to point its spacecraft towards Earth and mitigate tangible problems associated with poverty. The Satellite Instructional Television Experiment is a well-known episode in the space agency's history and was key in defining it as a societal program for the people. Its founder Vikram Sarabhai famously stated in 1966: "We do not expect to send a man to the moon or put elephants, white, pink or black, into orbit round the earth" (Sarabhai, 1966/2001, p. 92). Instead, India would use space technology to address the pressing needs of its people. In 1969 Sarabhai delivered aspeech outlining the plan for instructional television at the Society for International Development Conference in Delhi (November 14–17; Sarabhai, 1969). His idea was innovative and artfully distinguished India from the ambivalent motives of the Space Race between the United States and the Soviet Union.

However, there were limitations to his vision apparent in his 1969 speech, when he conflated education with knowledge transfer, saying: "The process of education is basically related to an information dissemination/transfer process" (Sarabhai, 1969, p. 5), which suggests he anticipated knowledge only needed to flow to villages and not the other way. He did though recognize that the success of the apparatus would depend on the sensibilities of those building and operating it, adding, "much depends on the objectives and assumptions of those who create the operating system" (p. 6). At the outset, the satellite television technology was imagined as a conduit by which to deliver new farming methods, contraception methods, health information, and, by bringing glimpses of the outside world into settlements unreachable by road, an amorphous belief in modernity. This imagined idea of top-down control and knowledge dissemination was reified in the architecture of the space satellite.

The relation between the imagined idea of the satellite and the imagined idea of what SITE could achieve is captured in a government-funded documentary entitled *Space and India* (Chandra, 1971) in which Vikram Sarabhai appears. In the film he stands in front of a blackboard, chalk in hand, and explains with a kind of breathless excitement a breakthrough innovation. With a new level of power in satellite transponders, he reports, it will be possible to broadcast to the whole of India at a low marginal cost using cheap chicken wire antennas installed in villages. The film cuts to animation of the disproportionately large NASA ATS-6 satellite orbiting above India. Then with great intensity Sarabhai says that in his own opinion the single most important benefit of the satellite system would be "the self-confidence that this will generate." It is the cognitive shift that ultimately matters: the overarching sense of empowerment gained through the knowledge that India could engineer satellites to circle the whole Earth: a compelling image tied to the equally compelling idea that real independence for India would only be achieved with indigenous technical know-how. The film splices between Vikram Sarabhai at the blackboard and audiences watching the first instructional television program for farmers *Krishi Darshan*.[2] Men with weather-worn faces glance uneasily towards the camera observing them visibly compromised, it appears, by the new technology. The link between the orbiting satellite and confidence was in practice going to be less straightforward than Sarabhai's diagram suggested. The images of the audiences portend the ways that knowledge beamed in from space was just as likely to undermine the indigenous knowledge of rural communities as produce the hoped for positive cognitive shift towards confidence.

The operation of SITE was by all accounts multi-layered, exhausting, inspiring and challenging. As it was organized in collaboration with NASA and funded through UNESCO, all eyes seemed to be on the energetic ISRO personnel on the ground ensuring its success. Among the best accounts of these days are a few surviving texts by

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[2] *Krishi Darshan* was broadcast from 1969 in the vicinity of Delhi and continues to this day. It translates as "Glimpse of Farming" or "An Audience with Farming," and darshan has a strong association with deities.

Yashpal, the Director of the Space Applications Centre in Ahmedabad, delivered in radio broadcasts (Yashpal, 1974, 1975). Another is a particularly touching account by the representative of NASA Howard Galloway who visited villages to monitor reactions and fix unending technical problems.[3] Nonetheless, this was an extremely tight operation from which results needed to be shown. Many ISRO employees at Space Applications Centre in Ahmedabad were social scientists collecting data using new research methods to understand how audiences reacted to editing techniques such as flashbacks and to animation (Chander & Karnik, 1976). It is in this documentation that the sense of separation of audience from technology is most apparent and the strategic objective of the experiment to change behavior adds a darker layer to the hubris.

Instrumental control of populations by the state, by any means necessary, became a reality in India on June 25, 1975, a month before SITE began, when Prime Minister Indira Gandhi, responding to challenges to her authority and a critical level of political unrest in the country, imposed a state of emergency on India. During this time there was excessive bullying and oppression particularly of lower castes and censoring of the press. The documentation of SITE reveals no evidential link between "The Emergency" and the process of SITE, and yet it bristles with the one-way direction of control. To use the language of the Subaltern Studies Group,[4] nowhere in the historical account is there the "authentic voice" of the audience, who remain the "subalterns" of the technical system (Guha, 1988). The documentary literature from SITE consistently puts the village resident on the back foot, as the subject to be modernized.

Acting on the System

From my interactions with former ISRO producers of the project, this reading is one they would broadly agree with. Many spoke about being changed by SITE and the "learning and unlearning processes" (Baradi, 1978, p. 35) that affected them all profoundly as the top-down approach of SITE radically shifted to ground-up production. After August 1976, when the official SITE project finished, a pilot continued in Kheda District near to Ahmedabad, broadcasting from a transmitter tower set up in Pij that relayed the signal from the Earth Station in Ahmedabad. Though no longer linked to

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[3] Howard Galloway's account is a compilation of his Telegram reports to NASA colleagues in which he states at the outset he will try to give the picture of the richness of SITE and his clear love of life in Gujarat. He relates, for instance, the waist-deep floods of Ahmedabad's monsoon and the extraordinary hospitality he and his family received as they visited villages. It is a particularly poignant account because Galloway died suddenly just before the end of the project. Also worth reading for a more heartfelt interpretation of events are the texts by six anthropologists who lived in villages for a year, from six months before SITE, in order to observe changes to daily life (Agrawal & Vishwanath, 1985).

[4] A relatively small and focused group of history scholars working together from the late 1980s on revisionist histories mainly concerned with bringing to light a range of overlooked nationalist uprisings in colonial India.

the satellite, the idea was to develop SITE's achievements in readiness for INSAT, India's own direct broadcast and telecommunications satellites. It was only during this later stage when international focus subsided and there was time to work in a more organic, intuitive and reflective way that ISRO producers began to realize the creative potential that lay with their audiences. To build a picture of how this change came about, the process of inversion from top-down to ground-up methods of TV production needs to be followed from the perspectives of different actors involved. Some of these perspectives are captured in documentation, which original participants helped locate during my year in Ahmedabad. By together revisiting and reflecting on the enduring significance of this phase of practice, a nuanced picture formed of how the methods of creative practitioners influenced the shift in participation.

One of the documents that gives detail to the picture is the diploma project of a student from the National Institute of Design (NID) in Ahemdabad, Dinaz Kalwachwala, who in July 1977, two months after The Emergency was lifted, attended a seminar at the Space Applications Centre entitled "T.V.—For the Oppressed" (Kalwachwala, 1978). Citing this seminar as instrumental in her decision to use her final year diploma project to counter the exploitation of children, her project proposal outlines her plan to make a series of five short television programs in a village, co-produced with children.

It is telling how Kalwachwala identifies in her opening project proposal the strength within creative activity to build with the hand and mind, writing: "Perhaps, if the child is given a chance to question, to create, it would give him satisfaction and confidence that he can create something that is not only a product of his hands but of his mind too" (Kalwachwala, 1978, pp. 1–2). Providing the opportunity for creative activity is, very obviously for her, the route by which children could build resilience to exploitation, because achieving agency within the technological system opened many routes simultaneously to tactical and overt re-imaging of their identities. Turning the tables on the original idea that the state could change rural residents into modern subjects, Kalwachwala's idea, which resonated with that of many other colleagues, began to open the way for residents to send back to the state an image of themselves of which the state, it seemed, had hitherto remained willfully ignorant. The power of the shift in image production is captured in the words with which Kalwachwala (1978, p. 2) begins her account: "The confidence thus gained by the child could be, as one would expect over a period of time, moulded to help him build his inner resistance mechanism, to act upon the situation, rather than be acted on by it." It was only from the position of author that cognitive innovation opened as a possibility.

This is only one of many examples in which the realignment of audiences towards authorship became more tangible. Others include the setting up of writers' workshops by Vishwanath, the former Head of the Film and Television Institute, who led the Kheda programming for a while. The writing not only generated scripts for television programs that drew on local experiences and cultures, but also generated new

work possibilities for these writers together with the confidence and social mobility that was key to the original vision of Vikram Sarabhai. Another important factor in this shift was the technology itself, which ISRO technicians developed so that film cameras by this time were replaced with the new Portapak video cameras. No longer tied to film that has to be processed away from the field, video meant that for the first time programs recorded in villages were viewed immediately. Pushed by budget cuts, actors were now recruited directly from village audiences, and the long process of research, scriptwriting, acting and recording was incrementally replaced as actor/audiences ad-libbed scenarios, picked up the cameras and made the programs themselves. Vishwanath was deeply affected by the scenario of village residents making their own programs, writing: "It started dawning on many of us that the problem was theirs and the performance was theirs and finally whatever was captured on the video tape was going to be theirs" (Vishwanath, 1978, p. 30). He encouraged the use of cameras as instruments of social empowerment.

The space scientist/media producers moving in eclectic social circles between rural and urban contexts with footage shot in villages, depicting exactly the issues residents wanted to draw attention to soon brought extraordinary results, acting as another stream of influence in addition to the broadcasts. E. V. Chitnis, who became Director of the Space Applications Centre following Yashpal in 1981, writes of the contingent opportunities opened up by their work when in a meeting with officials they decided to show a film shot by villagers of an irrigation problem they were facing. He writes: "It had an electrifying effect and that august assembly felt that something startling had come to their knowledge. Kheda TV then arranged a meeting of the aggrieved farmers with the highest concerned who immediately instructed the officials to take steps to solve the problem" (Chitnis, 1978, p. 23). Villagers now had a means of demonstrating maltreatment and countering any false claims made about them by officials, shifting power relations. What appeared as serendipity, for instance the chance meeting of the film crew from ISRO with officials who were neglecting their duties to the lower class rural residents, was also an element of the design of the system of which all concerned would have been aware. Surreptitious spaces of agency had opened up at the edges of the master plan.

Resistance to Audience-Led Production

The demise of the Kheda project, and its diverse methods of developing cognitive agency through creative activity across rural communities and disciplinary domains, is linked to a number of changes in technology, international relations and the path of socialist politics in India. It also links to the tragic backlash against audience-led production. The opening of agency through methods familiar to creative practitioners, such as Vishwanath, who took a leading role in the direction television programming in Kheda took, brought with it responsibilities the ISRO producers were

unprepared for. One of the programs aimed at opening mindsets to challenge exploitation resulted in violent retaliation. In challenging the social order, the space agency was taking on extremely high stakes in instrumentalizing social reform through audience-led television broadcast. The spectrum of resistance to audience-led television is an aspect of the demise of the project that for the original participants remains a disquieting and unresolved legacy.

In the early 1980s when India's INSAT satellites became operational in time to broadcast the Asian Games nationally, a decision was made to dismantle the transmitter tower at Pij and end the Space Applications Centre's Kheda Communications Project (A. Chatterjee, personal communication, May 6, 2016). The decision caused huge protests around the transmitter in Pij, from residents who also wanted access to the entertainment now being broadcast nationally. When finally the transmitter was taken away, the opportunity that had briefly opened for participatory television also closed.

Although too many activities and opportunities were emerging for there to be a single thread to this narrative, it is clear how the larger change emerged through exchange and progression of sensibilities and knowledge amongst participants that also generated and responded to changing technical apparatus. It is clear also how the inclusion within the interdisciplinary teams of creative practitioners lent methods of teaching authorship that were key to locating cognitive innovation with village residents and their concerns and perspectives. Creative encounters with science and technology caused a shift in which for a brief time audiences became the "prosumers"—both producers and consumers. The spaces of agency that brought this shift opened through a process whereby a chain of interdisciplinary practitioners gradually exchanged—through materials, experiences and the handling of technical apparatus—the agency to observe and depict each other. With the removal of the transmitter, the cameras, the ISRO scientists, social scientists and creative practitioners, the productive interstices used by village residents were lost. Articulating the elusive mechanisms by which subalterns gain agency to act and to innovate remains a challenge within contemporary planning for participative technology. Perceiving the symbiosis between creative activity and cognitive innovation through a historical example provides a transferable measure: a technological system that displaces creativity also displaces the agency to act upon the system.

Acknowledgments

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Response to "Displacing Creativity: Artists, Space Scientists and Audience-Led Television in 1970s India" by Guy Edmonds

This was an inspiring re-discovery of a moment of emergence of new voices. I enjoyed the sense of surprise that is palpable, even amongst their supporters, that the 'villagers could do it for themselves.' This paper is a good example of a prevailing theme of Off the Lip 2017, that of creativity being socially situated.

There are already studies on the uptake of the Portapak by 'artists and political activists' (Slootweg, 2016) and there is a special degree of urgency felt by archivists for Portapak recordings given the fragility of the videotape medium. What was interesting here was that even in the hands of non-radicals, the technology becomes political. Video technology and small budgets created an escape from subaltern existence. It would be good to cross reference this with the studies from the anthology "Mining the Home Movie" (Ishizuka & Zimmermann, 2007), which has a global perspective on the potential of home movies to be a source for subaltern histories.

In terms of co-creation, comparison can also be made to the practices of travelling cinematograph shows of the early cinema era in which showman would ostentatiously film local people as part of their advertising routine. Often films would be developed the same day and projected for an audience of the same local people in the evening. The need for a subject of the camera to stand out from the crowd would lead to extrovert behavior which can be seen as a precursor of the 'hello mum' reflex. The presence of technology initiates a performance which would not otherwise have occurred. What is more melancholic is the insight that this paper gives us into a situation shared with cinema and the internet. It unearths a phase in the development of new technology before processes of standardization and commercialization gain dominance and lock down the possibilities of the initial innovation.

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