

FIELDWORK AND TECHNOLOGY

The images on the front and back covers illustrate two of several reflections in this issue on the impacts of technology on the world studied by anthropologists. On the front cover, an internet cafe is one of the first sights to greet visitors to Dhunche, once a 'remote' area in northern Nepal. On the back cover, a youth tries out a telescope during the commemoration of the confirmation of Einstein's General Theory of Relativity at Roça Sundy, Príncipe, where Arthur Eddington observed a total solar eclipse.

In his editorial, Bob Simpson remarks on how much the craft of fieldwork has changed as a result of the widespread on-site availability of communications technology, placing even the remotest sites within reach of home or employer. In this post-Malinowskian fieldwork, where the distinction between back here and out there has disappeared, what are the implications of this for our craft and for the quality of our observations?

Gisa Weszkalnys reflects on her fieldwork site of Príncipe as the location of one of the most important events in 20th-century science, the confirmation of Einstein's General Theory of Relativity. She overlays the 2009 commemoration of this event, with international institutions promoting scientific knowledge and tourism, with another, colonial history of Príncipe as the focus of a controversy around the alleged use of slave labour in its cocoa plantations.

As Kristin Loftsdóttir argues in her article, science and technology are among a range of markers used to determine who is most in need of international development, thus contributing to what she calls the 'racialization of development'.

Akbar Ahmed alerts us to the fear in Washington, DC and Islamabad that the Taliban, who have recently taken over his field site in Swat Province, could potentially destabilize world order by appropriating nuclear technology.

There are evidently many ways in which science and technology can and do affect our field sites. One of the greatest challenges for anthropology will be to experiment creatively and innovate with appropriate technologies in partnership. In this way we can generate more egalitarian conversations in an atmosphere of mutual respect, trust and tolerance. Whatever fieldwork becomes, it must be founded on such engagement with the broadest of publics, while making the most of these new technologies.

GISA WESZKALNYS

at
anthropology
today



at

anthropology
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new technology
and the globally
connected field

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development

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comemmorating
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BEN CAMPBELL

Príncipe eclipsed

Commemorating the confirmation of Einstein's Theory of General Relativity

Gisa Weszkalnys

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Fig. 1 (above). President Cassandra of São Tomé e Príncipe (right) at the unveiling of the RAS/IAU plaque.

Fig. 2 (below). Detail of the plaque.

Using the anniversary of a major scientific experiment as anchor for a campaign promoting scientific knowledge and tourism in a far-flung location seems a straightforward idea. When it first emerged in a conversation I had in November 2007 with José Cassandra, the regional president of Príncipe – a small Atlantic island just off the West African coast and a part of the Portuguese colonial empire from the 15th century until 1974 – I didn't foresee how complex the project might become.

I had been conducting fieldwork in São Tomé and Príncipe (STP), the micro-island state of which Príncipe is now an autonomous region, when I came across a small marble plaque in the Roça Sundy, a sizeable ex-colonial plantation. It marks the spot where, in 1919, the British astrophysicist Sir Arthur Eddington proved Einstein's Theory of General Relativity. Eddington's spectacular discovery hurtled Príncipe briefly into the scientific limelight. From March to June 1919 Eddington led an expedition to this remote island, sponsored by the Royal Astronomical Society, to observe a total solar eclipse. The observations made – both in Príncipe and in the Brazilian town of Sobral to which a parallel expedition team had been sent – helped to prove ideas put forward by Albert Einstein. Einstein had predicted that light would be bent by objects of great mass, such as the sun – a prediction that arises from his now well-known theory of general relativity. Today Príncipe's role as the setting for one of the most significant experiments in the history of 20th-century physics is obscure, but not forgotten.

My original research dealt with something quite different, however, namely people's expectations of potential oil resources in STP's offshore waters, which could turn its inhabitants into millionaires overnight (Weszkalnys 2008). Speculations about STP's oil gained force in 1997. Twelve years, two bidding rounds, several signed and subsequently cancelled agreements, a test drilling, a legal regulatory framework, and much technical assistance later, oil has yet to be extracted from the islands' waters. My



fieldwork focused primarily on the larger island of São Tomé and the capital where all the major state administration, international organizations and infrastructures are concentrated. Much of the rest of the island, in particular the former plantations – which since the political *abertura* ('opening') of the early 1990s have been structurally adjusted and divided up between largely impoverished farmers – seems marginalized. This observation is even more true for Príncipe, São Tomé's sister island, located about 140 kilometres to the north and home to 6000 people, barely 5% of the country's population. Connected to São Tomé by irregular ships and a twice-a-week flight, Príncipe feels isolated and far removed from the locus of power and influence.

On 29 May 2009, Príncipe saw the celebration of the 90th anniversary of the eclipse expedition, an event in which I participated as part of a team from the Royal Astronomical Society.¹ British, Portuguese and Brazilian scientific delegations, together with nearly a hundred local dignitaries and residents, gathered in Roça Sundy, with its derelict hospital and decaying master building (now supposedly serving as the residence of the president of the Republic on his visits to the island). About 300 people still live in

Fig 3. Richard Ellis and journalists study the 1999 plaque presented by the Lisbon Geographical Society.
Fig 4. The plaque presented by the Order of Malta.



Sundy today, in what were once referred to as *senzalas*, the rows of houses for the former plantation workers. This was the climax of a week of lectures, media reports and events held in Lisbon, in São Tomé and in Santo António, Príncipe's sleepy capital. There was music, dance and food, and President Cassandra unveiled an interpretative plaque that had been shipped over from Britain.

My focus in this article is both ethnographic and methodological. First, sites of scientific knowledge production, even a purpose-built laboratory, are never quite as neutral as they are made out to be (Latour and Woolgar 1996, Schaffer 2007). They contain an array of discursive and material interactions, which add to their frequently politicized and contested nature. Príncipe is a case in point, with a 'diplomatic contest' unfolding around the eclipse commemoration. At the same time, the establishment of cultural heritage is often accompanied by a politics of memory that encourages or enforces a forgetting of troubling aspects of the (post)-colonial past (Rowlands and de Jong 2007). Here I seek to probe into what gets excluded from a commemorative event such as the anniversary celebration of the eclipse expedition, and the writing of scientific history.

My second point is methodological, in that I suggest that events such as the eclipse commemoration can open up new anthropological insights. As anthropologists we are well accustomed to exploiting specific ethnographic moments and events – a ritual, a celebration, etc. – for their heightened symbolic content, as particularly legible cultural texts. However, the point I want to make about the eclipse commemoration is not that it made visible or observable processes that would usually remain obscured. Rather the event is methodologically interesting because it is unique and atypical, involving elements, groups of people and things that would not otherwise come together. Such an event, I argue, affords ethnographic insights that anthropologists should not dismiss.²

Post-colonial ambiguities

Soon after returning to the UK from fieldwork, I began to make first enquiries into possible sponsorship for a commemoration of Eddington's expedition. Around this time I was contacted by Richard Ellis, a British astronomer at Oxford who (like Eddington once) had previously held the Plumian Professorship at Cambridge, and was keen to embark on a personal pilgrimage to Príncipe. Over the months Richard and I firmed up plans to organize a 90th anniversary commemoration, which would coincide with the International Year of Astronomy (IYA).

In September 2008 we presented the project to a series of Santomean officials. My local 'connections' and our affiliation to renowned British universities won us an audience with the president of the Republic of STP and an appearance on national television. We found an eager

collaborator in Cassandra, the incumbent and extremely popular regional president whose continuing residence in Príncipe (rather than on the larger island of São Tomé) was, in the eyes of many people I talked to, evidence of his patriotism and devotion to the island. The idea to turn the eclipse expedition anniversary into an event and to install an informative plaque on the site where Eddington made his observations chimed with efforts to promote ecological and cultural tourism on the islands. Additional collaborators were found in Pedro Ferreira and Richard Massey at Oxford and Edinburgh, and funding was secured from the Royal Astronomical Society (RAS) and the International Astronomical Union (IAU), who granted the proposed commemoration 'special project' status within the IYA2009.

In the short 18-month period leading up to it, the eclipse commemoration became a contested event. It emerged that a Portuguese team had been developing similar plans. While the Portuguese initially appeared to have a more direct contact with their Santomean counterparts, we soon managed to achieve a degree of co-operation rather than duplication: they would be responsible for most of the logistics and celebrations in both Lisbon and STP; we would contribute with a talk by Pedro Ferreira, illustrative posters and a larger interpretative plaque. In the end, the RAS and IAU dispatched a team of three people, the Lisbon Geographical Society mustered a team of eight, and the Portuguese NGO Scientists in the World was represented by three members. During a week in STP, Portuguese and Brazilian scientists gave talks on astronomy, and Scientists in the World installed a small exhibition. We were received by Portuguese and Brazilian diplomats, who also wished to attend the celebrations. As we arrived in STP with our 50kg brushed-steel plaque, which we had managed to get on the plane only because President Cassandra put in a word for us at the STP Airways check-in, we learned that ours would not be the only one. There would be two additional, smaller plaques sponsored by the local representation of the Order of Malta, which had also arranged for the entire site to be embellished with flowerbeds and tiled paths.

The eclipse commemoration began to take the air of a post-colonial diplomatic venture. The event entailed what is a staple topic of Santomean conversations: the country's apparent receptiveness not so much to geopolitical power play³ as to all kinds of real and not-so-real projects, which often take the form of business ventures between the state and third parties. Whether it is 'new' but inadequate generators for the country's dilapidated power station, a fleet of fishing trawlers now dumped off the coast, a closed-down fish cannery, or a Free Trade Zone that remains advertised on billboards just outside the airport as eternally in the 'future', STP's landscape is littered with the traces of abandoned projects promising development. Even if these projects rarely achieve their stated outcomes, however, they cannot simply be seen as development failures. One

can only guess that many of them were never meant to work out in the first place. STP is impossible to comprehend without taking into account the rumours surrounding such projects and their actual and alleged beneficiaries.

Consider, then, the suspicions whispered to us as if they were important pieces of secret intelligence, which implied that the Santomean Order of Malta was but a rogue offshoot of the internationally recognized *real* Order of Malta. Indeed, when we sat down together to run through the texts for our respective plaques, the Order's local representative, an exuberant Belgian, explained to us the complicated history of two competing Orders of Malta, with one (the Catholic) disputing the legitimacy of the other (the ecumenical).⁴ Apparently STP was one of very few countries in the world that recognized the ecumenical Order, hence his willingness to contribute to the embellishment of a historical site. As we went to the port on the day our plaque was to be shipped from São Tomé to Príncipe, we met our Belgian friend there: sure enough, he also owned one of the ships that transported goods and people between the two islands.

The suspicions voiced regarding the illegitimacy of the local Order of Malta are ethnographically interesting: they formed part of the Santomean form of sociality that revolves around the sharing and passing on of rumours. More importantly, I want to offer them as a mirror in which to inspect, in critical anthropological fashion, the supposed legitimacy of the other parties involved in the commemoration, including our own.

In a sense, our RAS/IAU delegation came to the celebrations with a proprietary conceit of sorts, for our sponsors had also sponsored the original expedition. We all had personal motivations for our participation and valued the event differently: as a worthwhile project furthering the public understanding of science (which has found considerable recent recognition from Western funding bodies), as an opportunity to explore Portuguese ex-colonial history, or as a way of repaying some of the enormous debts of gratitude incurred during fieldwork. Alongside this ran a sense of scientific internationalism, perhaps not unlike that which had driven Eddington (and about which I will have to say more in a moment) and perhaps helped by the fact that our 'British' team was really a multinational British-Portuguese-German venture.

From a Portuguese perspective, however, we might easily have seemed to benefit unduly by walking in on what had been an existing Lusophone project. Twenty years earlier the Lisbon Geographical Society had instigated a first commemoration of the eclipse expedition in Príncipe, initiated by one of its members, then ambassador in STP, during which the existing marble plaque was installed. In the 2009 repeat of this, the Society was obviously putting in a huge organizational effort. The week of celebrations started off with a conference held in the dignified setting of the Lisbon Geographical Society, in the presence of President Cassandra and a series of Portuguese and Brazilian speakers. We were shown a brief film clip from the 1989 commemoration, which had been a smaller but noteworthy affair. Now, it was proclaimed that two letters had been unearthed in the Society's archives which confirmed its essential role as facilitator of the original expedition. Sent by the Royal Astronomical Society in 1917, the letters enquired about the climatic and geographical conditions in Príncipe in preparation for the British expedition.

Portuguese involvement in the celebrations appeared to be more than a post-colonial hangover. In his concluding remarks to the opening ceremony, the Portuguese Minister for Science noted a certain irony: was this event an attempt to assert Portugal's agency in this scientific discovery – retrospectively or prospectively – or, more generally, to improve Portugal's position in the world of science?

Indeed, official Portuguese interest in the 1919 eclipse expedition seems to have been minimal (Mota et al. 2009). Although the Portuguese government expressed its support, the Portuguese Astronomical Society remained, for various reasons, almost completely uninvolved.⁵ At the time of the British appeals for support, Portugal found itself in political turmoil, having just passed through the vagaries of the First World War and a domestic revolution that brought a temporary re-establishment of the monarchy at the beginning of 1919. This may explain the circumstances that led to the relative lack of participation by the Portuguese state and scientific institutions at the time.

So what and whom were we celebrating on that day in May 2009? Lest it be assumed that the commemoration was hijacked entirely by foreign interests, there was genuine local interest, as much as can be reasonably expected from a microstate of 170,000 people. A Santomean literary scholar at the University of Lisbon, Inocência Mata, had made earlier attempts to publicize Príncipe's role in the history of science, noting her compatriots' indifference to the matter (Mata 2008). The talks this time were held in front of sizable audiences in the Portuguese cultural centre and the Polytech, the only state-run institute for higher education. Our contact there was professor of physics Manuel Penhor, who in the weeks running up to the event had toured local secondary schools with a specially prepared poster. This ensured some degree of public awareness of an event of which, as I understood from conversations with Santomean friends, people had been largely unaware (despite the perhaps less publicized 1989 commemoration). And when the members of the Portuguese NGO Scientists in the World arrived with their school-based outreach work, both pupils and especially teachers were eager to take advantage of this rare opportunity to update their training, which often does not go much beyond secondary school level.

Cassandra had ensured that the celebration in Sundry would be a success by transporting nearly a hundred people, food and a local dance group over the washed-out dirt road to the plantation. In the context of upcoming regional presidential elections, scheduled for 2010, the celebration of Einstein, Eddington and the eclipse expedition offered an opportunity for Cassandra to display his remarkable capacity to tap international resources. The Sundry community had put on their own music and dance programme, it was explained to us, in order to display their joy to their foreign visitors. A young man with a leading role in a local community group we had met on our visit to Sundry the previous year assured me that the community would gladly assume responsibility for looking after the new tourist attraction. A small group of girls huddled nearby, whom I encouraged to take a look at the new plaques, informed me that this was only for *brancos* ('whites') and that a guard had threatened to beat them up should they come too close. I was left hoping that this would be only a temporary situation, charitably interpreted as an expression of respect for the president and his diplomatic guests on this special day.

The celebration happened to fall in a festive week in the local calendar, including Africa Day and Children's Day, making it all the more memorable. It seemed to confer a rare sense of importance and a fragile hope that, as Cassandra promised in a celebratory speech, Sundry would be turned into a centre of science and education on the island. Yet amid all the diplomacy, the speeches on Einstein, Eddington and gravitational lensing, the handing round of telescopes among excited children in Sundry, allowing them a closer look at the stars above their home that had once helped a British astrophysicist to fame, there remained, at least in my perception, an important lacuna at the heart of our celebrations.

1. I am extremely grateful to Richard Ellis, Pedro Ferreira and Richard Massey, who worked enthusiastically and tirelessly to make this project happen. They made it an extremely rich interdisciplinary and personal experience. I also wish to thank the Royal Astronomical Society and the International Astronomy Union as well as Rombout Swanborn and Africa's Eden for their generous funding of our expedition. Research for this paper benefited from conversations with Pedro Ferreira, Nicky Reeves and Simon Schaffer.

2. Anthropologists have problematized science in a number of ways (see, e.g., Edwards et al. 2007). My discussion here is inspired by conversations with Andrew Barry about events and experimental moments (see also Barry 2008).

3. Geopolitics play out, of course, in relation to the country's putative oil assets, but this discussion is beyond the scope of this article.

4. There are numerous disputed 'mimic' Orders of Malta. My intention here is not to analyse this phenomenon (others have done so in much detail, e.g. Hoegen Dijkhof 2006) or to take sides in the dispute, to either confirm or question the legitimacy of what was introduced to us as the Santomean representation of the Order of Malta.

5. For a thorough discussion of the issue of Portuguese involvement and the reception of the Theory of General Relativity in Portugal, see Mota et al. (2009).

6. Personal communications with Lowell Satre, Ana Simões and Matthew Stanley.

7. Cf. Kenefick 2009.

8. For Cadbury's these issues matter, as renewed suspicions have emerged since 2000 that slave labour may be used in its cocoa plantations, this time in Côte d'Ivoire. Cadbury's now ensures an ethical side through its Green & Black's brand, while the chocolate industry more generally has struggled to develop a viable fair trade certification (Chatterjee and Elias 2008).

9. It is too early to assess how Eddington's expedition and discovery will be integrated into STP's national history. Before leaving the country in June 2009, I spoke with the director of the National Historical Museum, discussing the possibilities for integrating references to the

expedition in an exhibition of images of the Portuguese *roças* dating from the period (and sponsored by the Instituto Marquês de Valle Flôr; see Instituto 2008). The troubled issues of labour conditions in STP's plantations, and of slavery and colonialism more generally, do not as yet form central parts of local school curricula. Apparently, government plans to revamp Roça Sundy as an educational and scientific centre would also include the restoration of the cultural patrimony, including the *senzalas* – without, one can only hope, displacing the existing population. In September 2009 the 7th International Workshop on 'New Worlds in Astroparticle Physics' (a biannual conference organized by the Portuguese Instituto Superior Técnico) was held in STP, and accompanied by a 'School of Physics' directed at schoolchildren, students and the general public.

Cultural histories

Eclipse expeditions of the colonial era may be considered imperial endeavours pursued by other means (Pang 2002, Schaffer 2007). The Príncipe expedition was somewhat unusual in its relation to such colonial ventures. An eclipse expedition to prove Einstein's theory had been long in the making. It was delayed by the outbreak of the war, which made the project both logistically and ideologically difficult. Eddington's support for the German-Jewish scientist Einstein bore him personal and professional risks – not only because of the novelty of Einstein's ideas, but also because of his nationality (Stanley 2007). In a climate of pronounced anti-German sentiment among his British colleagues, Eddington had vigorously championed Einstein throughout the First World War, appealing to scientific neutrality and internationalism. This aspect of Eddington's scientific pursuits was highlighted for a British audience in a BBC dramatization, broadcast in December 2008, on the relation between the two scientists, culminating in the eclipse expedition and the discovery. To Eddington, the expedition was to prove both a scientific and an ethical truth.

Eddington was born and raised a Quaker; and he saw his participation in the expedition as a service equivalent to the 'adventures' of many of his fellow Quakers who participated, for example, in relief work in Germany during and after the war (Stanley 2007). More on scientific than on ideological grounds, he found important support in his friend Frank Dyson, at that time Astronomer Royal. Using his connections to the British Admiralty, Dyson helped Eddington gain exemption from conscription in order to pursue his duties to science (rather than his pacifist convictions).

Thus Eddington's project was not just a scientific endeavour; at this particular historical juncture, it was also a political one. But as a site for a *British* scientific experiment, Príncipe was politicized in other ways. At the time of Eddington's expedition, Príncipe formed part of Portuguese colonial territory and, together with its sister island São Tomé, was the world's leading cocoa producer. In 1905 the islands became the focus of an international controversy regarding the alleged continued use of slave labour on Portuguese plantations that pitted commercial interests against ethical concerns, and eventually resulted in the boycott of cocoa from São Tomé and Príncipe.

The islands' economic success had been achieved by a large, steady labour force recruited primarily from Angola, Cape Verde and Mozambique, with at least 4000 people brought in every year (Satre 2002). The abolition of slavery in the second half of the 19th century would have threatened this success, had it not been for the passing of a decree in 1899, the stated aim of which was to 'civilize' the 'barbaric' population of freed slaves by obliging them to work, and the introduction of an alternative system, in the Portuguese as in other colonies, of so-called contract labour. The plight of the *contratados* and *serviçais* was brought to the attention of the Anglo-American public by the young British journalist Henry Nevinson. Nevinson had travelled to Angola and São Tomé in 1904-05 on an assignment from *Harpers' Monthly* magazine. His subsequent articles and his book *A modern slavery* (1906) appeared to confirm rumours about the persistence of slavery-like conditions in the Portuguese plantations.

Nevinson's allegations had repercussions, especially for the British chocolate manufacturer Cadbury Brothers, which sourced cocoa from São Tomé and Príncipe. Cadbury's was one of three major Quaker-owned companies dominating the British cocoa industry at the turn of the 20th century. The company was well known for its promotion of labour ethics, championing the welfare of its employees, for example, through the construction of the exemplary workers' village of Bourneville, modelled

on the principles of the Garden City movement. Moreover the Quakers, known as the 'Society of Friends', had been very active in the anti-slavery movement. The allegations thus presented a particularly delicate problem for the company's reputation.

By the time of Nevinson's allegations, Cadbury's had commissioned Joseph Burt, also a Quaker, to travel to West Africa to make enquiries. Burt's report was made public in 1908 – seven years after Cadbury had first been made aware of slavery on the islands. In September 1908 the *Evening Standard* published an article accusing Cadbury's of deliberately ignoring the situation on the Portuguese plantations (Grant 2005). The company eventually vowed to boycott cocoa from São Tomé and Príncipe until death rates among workers declined. In 1917, annual mortality among the islands' labourers was announced to have fallen to 5 per cent, although real numbers were quickly revealed to be closer to 10 per cent (Satre 2005). While the British Foreign Office seemingly turned a blind eye to such revelations (the First World War had shifted British attention elsewhere, particularly to the situation in the German colonies), Cadbury's announced it would carry on with the boycott. It began to draw its supply from the Gold Coast, where cocoa was produced on individual, native-owned farms. Colonial fortunes were rapidly shifting: between 1921 and 1954, the labour force in São Tomé and Príncipe dropped from 38,000 to 17,000.

How did Eddington, Plumian Professor of Astronomy and Experimental Philosophy at Trinity College, director of the Cambridge Observatory and, importantly, a Quaker, react to the prospect of travelling to this controversial, isolated outpost of another nation's empire? I hoped to find some answers to this question in Eddington's letters from the trip to his mother and sister, which are preserved in the Wren Library of Trinity College. The letters give a very concise description of his impressions of places, people, food, hikes and the everyday of the journey. Eddington was accompanied only by his assistant E.T. Cottingham. Their journey took them first to Lisbon, then on to Madeira and Cape Verde, and they arrived on Príncipe on 23 April.

The list of the members of the Portuguese delegation greeting them reads like a roll call of the colonial administrative machinery: the governor, the judge, the harbour-master, the plantation owner, the plantation manager, the *curador* (responsible for the acquisition of new labour from the continent), the treasurer, and two men from Sierra Leone who staffed the cable station. These were the men who made Príncipe function as an engine of the colonial economy. There was no 'mention [of] any ladies – there do not seem to be any' (letter, 29 April 1919). The British scientists received a warm welcome and were shown around various plantations until they settled for Roça Sundy, owned by Sr Carneiro and managed by Sr Atalia, as their favoured location for the eclipse observations:

It is very comfortable here and we have all the assistance and facilities we need. About 600 native labourers are at work on the plantation and they have carpenters and mechanics at work so it is easy to get any small things required. We get on well with Mr. Atalia; I think it is pretty lonely for him out here and he is glad to have company. (letter, 29 April 1919)

Historical and social studies of science in Africa have tended to focus on the entanglement of science and empire, that is, on the question of how scientific knowledge was used to facilitate the exercise of colonial power. They assert that, in the colonial context, 'science is a socially engaged practice rather than a detached mode of pure objective research' (Dubow 2000: 1). This also holds true for astronomical experiments, despite their ostensible remove from the socio-cultural context in which they took place. The eclipse expedition reports, travelogues and popular talks produced for British audiences in Victorian Britain may

- Barry, A. 2008. 'Problems and events'. Paper presented at the Institute of British Geographers/Royal Geographical Society Conference, London.
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- Dubow, S. 2000. Introduction. In: Dubow, S. (ed.) *Science and society in Southern Africa*, pp. 1-10. Manchester and New York: Manchester University Press.
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- Grant, K. 2005. *A civilized savagery: Britain and the new slaveries in Africa, 1884-1926*. London: Routledge.
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- Instituto Marquês de Valle Flôr (ed.) 2008. *São Tomé, ponto de partida*. Lisbon: Chaves Ferreira.
- Kennefick, D. 2009. Testing relativity from the 1919 eclipse – a question of bias. *Physics Today* 62: 37-42.
- Latour, B. and Woolgar, S. 1986. *Laboratory life: The construction of scientific facts*. Princeton: Princeton University Press.



Fig. 5. Anniversary postage stamps issued by STP in 2009, commemorating the eclipse expedition.

Mata, I. 2008. A ilha do Príncipe: Um esquecido lugar na história. *Crônicas* 17 January.

Mota, E., Crawford, P. and Simões, A. 2009. Einstein in Portugal: Eddington's expedition to Príncipe and the reactions of Portuguese astronomers (1917-25). *British Journal for the History of Science* 42(2): 245-273.

Nevinson, H.W. 1906. *A modern slavery*. London and New York: Harper & Brothers Publishers.

Pang, A. S.-K. 2002. *Empire and the sun: Victorian solar eclipse expeditions*. Stanford: Stanford University Press.

Rowlands, M. and de Jong, F. 2007. Reconsidering heritage and memory. In: de Jong, F. and Rowlands, M. (eds), *Reclaiming heritage: Alternative imaginaries of memory in West Africa*. Walnut Creek, California: Left Coast Press.

Satre, L.J. 2005. *Chocolate on trial: Slavery, politics and the ethics of business*. Athens, Ohio: Athens University Press.

Schaffer, S. 2007. Astrophysics, anthropology and other imperial pursuits. In: Edwards, J., Harvey, P. and Wade, P. (eds), *Anthropology and science: Epistemologies in practice*, pp. 19-38. Oxford and New York: Berg.

Stanley, M. 2007. *Practical mystic: Religion, science, and A.S. Eddington*. Chicago and London: University of Chicago Press.

Weszkalnys, G. 2008. Hope and oil: Expectations in São Tomé e Príncipe. *Review of African Political Economy* 35(3): 473-482.

offer glimpses of such encounters. Such expeditions had become a popular form of exotic travel, and '[e]clipse observers took their tourism duties as seriously as anyone' (Pang 2002: 59). Yet astronomers based in the colonial observatories also routinely denied the involvement, for example, of local assistants (cf. Schaffer 2007). Similarly, but surprisingly, Eddington's constrained letters suggest that this man – a peace campaigner who, especially in his later popular writings, strived to reconcile his religious and scientific beliefs (Stanley 2007) – was prepared to dissociate himself from the contemporary politics in which his trip and his observational site were embroiled.

I was puzzled when I looked at Eddington's letters in the Wren Library. Engrossed in scientific pursuits, Eddington appears to pay no real attention to local working conditions or the workers themselves. There is hardly any description of the help they received in setting up the instruments and conducting the experiments, beyond a passing reference to a shelter being erected to protect the valuable telescope from sun and rain. There is also no mention of the interracial relationships on the island, which did exist, especially in the absence of 'ladies' which Eddington so truthfully notes. The only Africans singled out, the two employees of the cable station, are referred to for their usefulness: their English-language proficiency eases communications with the Portuguese hosts. A fleeting idyllic evening scene in Roça Sundry is oddly indicative:

We liked Mr Atalia [the plantation manager] immensely. He was very lively and amusing and extremely good to us in every way. After dinner we used to sit out in front of the house and there was generally a succession of natives came up to interview him on all sorts of matters. They evidently have great respect and confidence in him. (letter, 21 June 1919)

A scientific and cultural experiment

I had secretly hoped to find in Eddington's letters comments on the circumstances and people he encountered in Príncipe – a sense of place or, more to the point, some 'social' detail with which to flesh out the scientific history of the expedition. In their absence, I find myself continually returning to the possibility that it was Eddington – and not simply those who subsequently wrote about him and the expedition – who had carefully edited his story, anxious not to upset a fragile relationship with his hosts. There appears to be no explicit reference to the geopolitical context of the expedition in the archival record, apart from the reluctant support I noted above. The expert interlocutors I consulted in writing this article found nothing remarkable about Eddington's silence.⁶ They ventured various explanations: there was no reporting on the situation in São Tomé and Príncipe during the war; the Cadbury contro-

versy had been but a brief episode; and Eddington was too much of a self-consciously detached scientist to let these political issues interfere with his work (let alone upset his mother by mentioning them in his letters).

This has become an epistemological conundrum. Why problematize the eclipse expedition in this way? Eddington's discovery has been most commonly problematized in terms of scientific procedure: 'the 1919 expedition has remained famously controversial. Eddington was later accused of having tweaked the possibly deficient data obtained from the Príncipe observations, which he wearily described in a telegram to his friend Dyson: "Through cloud. Hopeful" (quoted in Stanley 2007: 107). As an anthropologist I could ask about scientific standards and rules, the agency of new technologies, and the specific enculturated practices that made some people doubt Eddington's findings. A second way of problematizing the expedition, which Eddington's biographers have begun to sketch out and which has found its way into the BBC broadcast, is to look towards the fraught context of European science. In this view, designed as a scientific milestone, '[t]o its contemporaries, the expedition was a symbol of highly contested visions of what it meant to do science in a world at war' (Stanley 2007: 123). But while the eclipse expedition's politics of European science have been made visible, the broader politics of European colonialism have not.

I am hopeful that by taking the licence to make explicit some of these (both current and historical) politics, the project 'Eddington in Príncipe' might move beyond what anthropologists have identified as the limitations of simplistic exercises in public understanding of science where, as Edwards et al. note wryly, '[t]he new "primitive" is the scientifically illiterate' (2007: 9). His role as a popularizer of science and his principled stance make Eddington an appropriate figurehead for such an endeavour. It is arguable whether his keenness to merge science and his religious beliefs should also have led Eddington to voice his political assessment of the expedition in his letters or other writings. Of course, I have my own interests in insisting on the relevance of the controversy around Portuguese uses of slave labour at the time of Eddington's expedition; they are to do with the notions of business ethics and corporate social responsibility as they circulate in STP today in relation to current oil developments.⁸ The genealogy of this discourse is worth tracing. Arguably, Eddington's silence on these issues becomes significant – becomes a *silence* – only if we are to commemorate his expedition as not simply a scientific but a cultural event.⁹

If the celebration of the expedition's anniversary was about the claiming of cultural heritage by a fairly young African state, it was above all riddled with post-colonial ambiguities. Although they were appreciative of the efforts of the various foreign institutions involved, there was also a sense among the Santomeans I talked to that more work would be required to ensure participation by a broader range of the local population. And whilst the low-level diplomatic politics surrounding the commemoration are now materialized in the four different plaques on site, some of the political ambiguities regarding the still recent colonial history of STP go unremarked. I have argued here that these ambiguities only emerge when we probe the uniqueness of this moment in which particular actors, agendas, national, scientific and post-colonial histories collide. That is to say, the commemoration of the eclipse expedition is ethnographically interesting not because it is an exemplary cultural event, but because it is atypical. What I have begun to explore is how such events can open surprising vistas on old and new questions about how things come to be significant, and the significance of an anthropological perspective. ●