



Mixing knowledge to negotiate with and on a volcano

Javanity and forest on the Merapi

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EDITOR'S NOTE

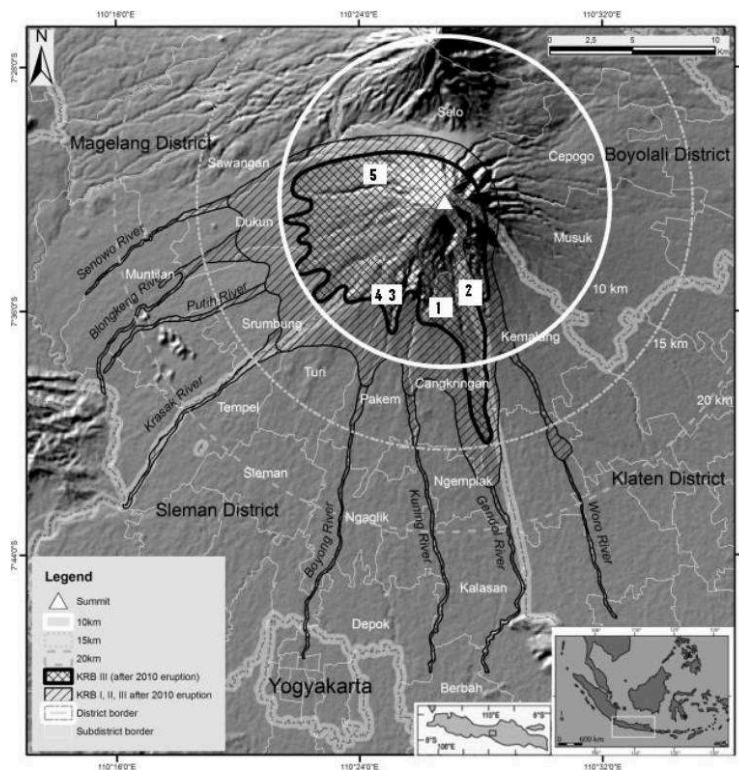
Translation: Brian Keogh

- 1 The contrasting appreciations of scientific knowledge and vernacular knowledge result in them often being considered as incommensurable. Some authors, however, suggest that the frontier between types of knowledge is more of a transition than a strict separation. The proximity of their methodological approaches and the permanent exchanges between their disciples thus favour their co-evolution and the emergence of mixed knowledge¹ (Addell, 2011). The very notion of incommensurability is discredited by an entire school of the social sciences which, it is true, does not deny the misunderstandings between representatives of distant cultures, but contextualises them and minimizes their epistemological impact (Subrahmanyam, 2007).
- 2 An extensive literature on the Merapi Volcano already exists, and it would therefore be expedient to review some of the data (Lavigne, 2001) to better appreciate the issues studied in this article. Reaching an altitude of over 2900 m, the volcano has erupted every four or five years for several decades. More than a million people live on its slopes, contributing to rural densities of more than 1140 per km², namely on the southern and western flanks. Although population densities decrease with altitude, several villages are nevertheless situated in a zone, bordering the limits of the Merapi National Park (*Taman nasional Gunung Merapi*², TNGM), where access is “prohibited” by the authorities. Furthermore, the town of Yogyakarta (eponymous capital of the province of *Daerah Istimewa Yogyakarta*, DIY) is situated only 25 km from the crater, and the countryside separating them is heavily populated. The Merapi is thus under intensive surveillance, from a spiritual, scientific and administrative point of view:

first, there is the “keeper of the keys” (*juru kunci*), an inhabitant appointed by the sultan and responsible for ensuring the annual ceremony of offerings, and the “tradition chiefs” (*kepala adat*) of the different villages; second, there is an armada of scientists who come from Yogyakarta, Jakarta, Paris or elsewhere; third, there are the police and administrative forces responsible to the national and provincial governments for ensuring that the different laws and regulations are respected. Everyone acts in the middle of a dense population, a situation compounded by increasing numbers of visitors as national and international tourism enjoys an unprecedented boom.

- 3 Confrontation between these visions and worldly practices that are so far apart can give rise to tensions, but also to a sharing of information resulting in new knowledge (both theoretical and practical, including, therefore, know-how). Employing a term used by Raffestin (1995) to refer to territories and languages situated between the vernacular and daily level on the one hand, and reference level on the other, I will qualify this mixed knowledge as “vehicular”³. The purpose of the present article is to show how the development, circulation and transformation of vehicular knowledge help make the tensions concerning the resources in this context of high populations densities acceptable. We will consider, in particular, knowledge concerning the forest and how it relates to the confrontation between Javanity and Islamic modernity.
- 4 The data used in this study were obtained from existing literature and from field studies on the slopes of the Merapi Volcano in 2009 and 2013. Observations and interviews were conducted mainly in four villages on the southern flank of the volcano (Kinahrejo, Kalitengah Lor, Turgo and Tritis) and one village on the western flank (Babadan). All these were mountain villages, the last settlements before the forest – figure 1). Both formal and informal interviews were carried out in Indonesian (apart from rare exceptions when an Indonesian/Javanese translator was required). In order to ensure flexibility in discussions and encourage spontaneity, interviews were not recorded and generally notes were only made (mixing French and Indonesian) after leaving the interviewees. The analysis involved seeking not a unique truth, but agreements, disagreements and contradictions concerning practices, knowledge, or interpretation of the situation. To achieve this, the author compared what was only his personal interpretation of observations and discussions he had been party to. This was done in three stages, with the different observations and discussions being compared firstly among themselves, secondly with the grey literature published by the local institutions, and thirdly with existing scientific literature⁴ (Dover *et al.*, 2004).

Figure 1. Location map of Merapi Volcano



1 : KINAHREJO ; 2 : KALITENGGAH LOR ; 3 : TURGO ; 4 : TRITIS ; 5 : BABADAN.

Base map from Mei, Lavigne *et al.*, 2013.

Javanity as mediance and as territoriality

Topographic Javinity

- 5 The province of DIY is one of the heartlands of “Javanity” (*kejawen*⁵), which blends the Nusantara Animist stratum with Hindu-Buddhist contributions and with the first Islamic modernity (Lombard 2004). Geographically, Javanity is expressed, on the one hand, by a holistic attachment to the land mixing religious syncretism and the sense of hierarchy and, on the other, by a centre-periphery gradation organised in concentric circles that is incarnated in the topography of the province (DIY).
- 6 At the centre, sits the palace (*Kraton*), seat of the sacred power of the sultan, surrounded by his quarters inhabited for generations by the families of “servants” (*abdi dalem*). Around this core is the town, traditionally the area of merchants, craftspeople, artists, and today universities (Yogyakarta is one of the country’s intellectual and artistic centres), technicians of every speciality, hotels, etc. This urban world sees itself as being generally humanised and controlled. The countryside makes up the third circle, a mix of rice fields and plantations, livestock and domestic animals. Although there are manifestations of the invisible world in the town, here they are more numerous (Bertrand, 2002).
- 7 Finally, the fourth circle is comprised of marginal areas with few signs of human impact and even hostile to man: forests⁶, mountains (*gunung*), sea (*laut*). The Indian Ocean, with its dangerous currents and described as being not richly endowed with

fish, constitutes the domain of *Ratu Kidul*, the Queen of the Southern Seas, dubious spiritual wife of the sultan, and venerated as much as feared. The mounts are the hills of Gunung Kidul in the South-East (karstic, not very suitable for agriculture, sparsely populated and considered hostile), those of Gunung Menoreh in the South-West and, especially, Merapi in the North, the home of *Ki Sapu Jagat* (“He who cleans the world”, linked in myths to the family of the sultan and to Ratu Kidul). Javanity bestows value on the volcanic ecumenal margins at the expense of the maritime margins: the shores of the Java Sea (25 kilometres to the south of Yogyakarta) are considered by the region’s inhabitants as being more hostile than the Merapi Volcano or the hills⁷.

Daily negotiations

- 8 In addition to *Ki Sapu Jagat*, the volcano harbours a whole series of different spirits. The hills surrounding the main summit and the forest are home to the *penunggu* (“those who wait”, in other words those who watch over the volcano). Their role is to protect the supra-human domain, in other words the heights of the Merapi: human beings may well frequent this area but they do not belong here, unlike the spirits or the wild animals. The author was frequently advised, and always by the older members of the community, that if he entered this land he had to greet the spirits that lived there and ask their permission to enter.
- 9 Local inhabitants live with their volcano and its spirits in a mode of permanent negotiation. Although the religion declared on their identity cards is generally Islam (more rarely Christianity), most Javanese practise the syncretism, *kejawen*. An example of this is the *labuhan*, the annual ceremony of offerings organised by the *juru kunci* and his assistants in the name of the sultan. Mixing prayers addressed to God and prayers addressed to the spirits in sacred Javanese, it takes place above Kinahrejo in a small temple (destroyed by the eruption of 2010) the entrance of which is framed by two statues of the Hindu god Ganesh. Apart from this high point, on a daily basis, every act is codified, since it is carried out within a network of reciprocal obligations between divinity, spirits and human beings.
- 10 As the domain of the supra-human, the volcano also harbours the infra-human: Javanese cosmogony, inherited from Hindu-Buddhist conceptions, places man at the centre of a continuum linking the Absolute to hell, via intangible spirits, man, other living beings and hell-like creatures. Flora and fauna thus have a fixed place in this ensemble and on the Merapi, depending on their proximity with Man. The “wild animals” (*binatang liar*) are at home here in the hills, while humans who venture here must follow precise rules and respect rituals for asking and thanking the spirits. However, if a wild animal devastates the fields or plantations or pillages the harvests, it is then in the wrong since it has invaded the human domain: macaques and boars are thus treated as “rogues” (*nakal*), a rather derogatory term in Javanese.
- 11 This holistic conception of the place of the human (the individual) and humanity (the collective) in a world integrating the supra-human and the infra-human becomes incarnate physically. Globally, this is expressed in the vertical and horizontal coexistence of three spiritual poles, the underwater domain in the South and below, the crater-summit of the Merapi Volcano in the North and above, and finally the Kraton in the middle. More locally, it is expressed in the destructive/fertilizing duality of the

volcano and the coexistence of the domains of spirits, fauna and mankind. These limits between the different domains are never closed borders, but gradual transitions.

- 12 The supra and infra-human areas are margins of the ecumene and are therefore constructed by permanent back and forth movements between daily practices and the constraints they impose on the whole of society, and metaphysical conceptions that are still very powerful and just as binding (the “trajectivity” concept of Berque, 2009). Javanity thus defines the sense of this very special milieu (“mediance”) that is the high-altitude tropical forest, while at the same time defining the conditions of coexistence between human and non-human, as well as the areas where they are exercised (“territoriality”, Raffestin, 1995). However, Javanity also has to deal with a powerful movement mixing Islamisation and modernisation.

Javanity in danger?

Islamism-modernism

- 13 Modernisation and Islamisation are two epistemologies that appear to be contradictory in Europe, but combine together in Indonesia. Although Islam appeared in the Archipelago in the 12th century by way of Indian merchants, it was only later that it affected significant segments of the population. In a Nusantara⁸ world dominated by agrarian kingdoms, where Hindu-Buddhism was closely related to the earth and hierarchy, Islam appeared as a vector of dynamism and openness, and the first wave of islamisation led to a first period of modernisation (Lombard, 2004). The European powers fitted into this mold, and contemporary scientific and technical modernisation became incorporated in this movement. Islamism-modernism, which experienced dramatic growth under General Suharto (1966-1998) and his successor B.J. Habibie (1998-1999), constituted the ideal for the expanding upper and middle urban classes (Raillon, 2003), at the same time as the traditional practices were becoming less valued. Thus Durand (2001: 108) deplored the “decimation by the powerful of everything that is likened to wildness (forests and different peoples)”.
- 14 Javanity is thus undergoing a gradual “folklorisation” and sclerosis. It provided a means for communication between the human and non-human, but modernity has radicalised this border, transforming it into a break between subject and object. Only the human remains from the domain of the subject, and the elements comprising the so-called “wildness” have been thrown into the infra-human. As for Islamisation, it has limited supra-humanity to God alone: *djinns* and *hantu* are now only his auxiliaries, and the Merapi a tool that God can use to punish human corruption. On the Merapi, the breakdown between generations is blatant in this regard. The older members of the community complain that younger members have forgotten about everything that made up the daily life of Javanity, now replaced by modern “town” practices (*dari kota*). Conversely, the younger generations (i.e. less than 60 years old) reproach the older members of the community for remaining stuck in the “old times” (*zaman dulu*), the nostalgia for which is understandable but does not carry much weight in the context of technologies relating to communications, traffic, and the scientific prevention of risks nor in the face of the economic promises of capitalist modernity.
- 15 The question of language holds a significant place in this respect (Raffestin, 1995): the younger generations, educated at school in the Indonesian language, are less and less

familiar with the sacred variant of Javanese, now increasingly seen as a fossilized language, used purely for rituals. However, in this role, Javanese is in competition with Arabic, more attractive because it is global and related both to Islamic tradition and the technological hyper-modernism of the Gulf Emirates. As for the vehicular functions (ensured by Indonesian) and exchanges (ensured by Indonesian and English), they leave little room for everyday Javanese, the use of which is limited to those who are able to speak it (family, local visitors,...). Thus, not only is the relationship with the mountains and the forest changing, it is increasingly being expressed in Indonesian, and even in English, via channels (television, school, etc.) that know nothing of Javanity.

Towards a fitna on the Merapi ?

- 16 Although very progressive, the first Islamic modernisation did not take place without provoking conflict with the religions that were ousted (Lombard 2004). Although such conflict and rivalry have never really ceased, for some thirty years now Indonesia has undergone a “chariatisation of minds” (Feillard, Madinier 2006), a process related, on one hand, to the global development of Islam caught between modernism, Salafism and traditionalism and, on the other, to dangerous links maintained by certain political fractions of the country with Muslim radicalism. In Indonesia, the tensions between supporters of a modernisation of Islam and proponents of an Islamisation of modernity have led to an alliance (a priori paradoxical) of the former with the traditionalists for whom the *kejawen* corresponds to a local sufism and not to heresy, while the latter have important networks in Egypt and in the Arabian peninsula (Raillon, 2003).
- 17 The latter, with strongholds in Java in certain Islamic universities and certain *pesantren* (Koranic schools), despise the practices associated with the Merapi volcano: in 2008, some of their members decapitated the statues of Ganesh in the Kinahrejo temple. Others, when they were unable to impose a ban on the *labuhan*, which they consider pagan, attempted to “chariatise” it: in 2008, the women were veiled and wore black robes covering their shoulders and arms. The population reacted strongly, however, with support on the *kejawen* networks, and the following years saw a return to traditional clothing.
- 18 Apart from the controversial episode, the way the figure of the *juru kunci* has evolved over the medium term is also evidence of this double tendency. *Mbah Marijan* (1927-2010) defined himself as a “farmer” (*petani*); he referred to a mystical type of knowledge and a practice close to chamanism. On the Merapi and in Yogyakarta, many people considered him to be wise and knowledgeable because of his “extra-ordinary” (in the etymological sense of the term, *luar biasa*) proximity with the zones of the volcano where there has been little human impact (particularly the “belt”, the fringe between the forest and the summit) and the spirits that they harbour. His son and successor, *pak Asih*, however, who works in administration at the *Universitas Islam Indonesia* and frequents the town more than the summit, has refocused the role on what it was originally (a simple delegate of the Kraton responsible for the annual ritual) and does not wish to present any opposition to instructions for evacuation, a scientific vision of the volcano, or orthodox Islam.
- 19 Thus, visions of the world and spatial practices come into contact, mix, confront each other, and even clash. This does not happen without giving rise to some very concrete

problems relating to planning and development, territorial control and access to resources. In this respect, the use of the Merapi forest is a particularly important issue.

Towards a renewal of the forests as milieu and territory

Emergence of an agro-forest

- 20 The forests of Java have long been used for hunting and gathering, places of exile, retreat and meditation or, during revolts, have provided refuge and hiding places – and still today constitute a reserve for game, wood and fodder. The forests also provided agricultural land for those who cleared plots and throughout the 20th century the forest area receded considerably as a result of demographic pressure. In the centre of the island, the forest now only survives on the mountains and in rare natural reserves in lowland areas. On the Merapi, forests now cover a limited area above the zones of rice fields, plantations and stock-rearing areas, and below the rocky zone of the summit. Their lower border (from 900 to 1200 m on the southern flank, but up to 1400 m on the western, northern and eastern flanks) serves as a limit for the Merapi National Park (TNGM).
- 21 The inhabitants of the Merapi live essentially from agriculture, an activity that has left its mark on the landscape. Rice fields dominate at the foot of the volcano, but are then gradually replaced by fairly intensive plantations of *salak* (“fruit-serpent”). Above these plantations, the landscape gradually changes to a vast agro-forest, a mosaic of small plantations put to uses that are as varied as the types of trees making up the forest.
- 22 In traditional Javanese, the agro-forest does not exist as such: the countryside reflects the human, while the forest expresses the non-human. Hence the reticence of inhabitants to qualify it by the term *hutan* – generally they prefer terms such as *kebun* (“plantation”, since management of the plot depends on the private decision of the farmer), or *ladang* (“fallow”, since its use evokes the extensive nature of forest practices). On the other hand, the official programmes do not hesitate to use the term *hutan*, for example to promote the government’s “people’s forest” (*hutan rakyat*) policy, which would combine reforestation and improvement of farmers’ incomes (Utari, 2012) while at the same time working towards an ultimate goal of sustainable development.

Reassessing the value of places

- 23 Within the context of these countryside development policies, both the production of dairy cooperatives and tourism have undergone rapid development over the past twenty years. This economic diversification has occurred by progressively involving the population concerned and in agreement with traditional mediation and territoriality, for which the change has therefore been smooth. Milk production, by developing the need for fodder, has helped increase the areas of agro-forest land. As for tourism, it has enabled a renewal of the economic role and status of the forest and of the summit zone: once the exclusive domain of divinities that were feared as much as respected, today it has become for certain inhabitants (guides) a source of livelihood that they frequent regularly, if not daily. It is true that this zone was already part of the *ecumene* before (as one of its limits and as one of the country’s high places), but its role

has changed: once “sacred territory”, today it is, at least in part, a “territory of exchanges” (Raffestin, 1995).

- 24 The creation of the Merapi National Park (TNGM) in 2004, making a sanctuary of the habitat for a rare and protected fauna, provoked, however, a territoriality conflict. The regulations enacted by the Ministry of Forests were met with immediate opposition from the inhabitants, who wished to maintain their traditional uses of the area: hunting, fodder, wood for heating. “Socialisation” (*sosialisasi*) and “popularisation” (*penyulhuan*) programmes have since enabled the passage from an interventionist paradigm to one that is more participative (Depraz 2006). This has helped the different parties reach a consensus which seems to be more or less respected by everyone: hunting has now ceased, and the inhabitants of the villages situated below the limits of the Park are today able to collect wood for heating and fodder.

Conclusion

- 25 From a Javanity perspective, the slopes of the Merapi Volcano represent a transitional zone between the countryside and the forest. The protection provided for the forest and the summit zone by the TNGM thus prolonged the traditional territoriality and mediance, which excluded the “belt” and the crater from the human sphere, but by reversing polarity (from “dangerous”, the summit zone became one to protect, whereas anthropisation was “reassuring” before but became “menacing”). However, the “environmental ethics” involved (Depraz, 2006) and the exclusionist rationales that they imply are radically different. While the form has been maintained, the substance has undergone drastic change.
- 26 Use of the summit area, forest resources and the status of different zones: practices, reflected in the rhetoric used by interviewees in 2009 and 2013 in the villages of Kinahrejo, Turgo, Tritis and Kalitengah Lor, are evolving rapidly. The Merapi is an extreme case, given its population density, the intensity of social dichotomies and the degree of risk to which inhabitants are exposed, but it shows the potential for renewing vernacular knowledge in the form of vehicular knowledge and the possibility of mixing it with scientific knowledge.
- 27 The border between human and non-human is redefined every day, according to the interests of the different types of actors, the constraints they have to deal with and the mediance in which they live and that they help construct. Even though the situation is not free of serious tensions, even crises (for example, during a volcanic eruption: Mei, Lavigne *et al.*, 2013), far from remaining incommensurable with one another, the different types of knowledge, know-how and practices interpenetrate and evolve together. This vehicular knowledge, mixing vernacular, traditional or local knowledge on the one hand, and modern, scientific and technical knowledge on the other, enables communication between the disciples of one type of knowledge and the disciples of the others, serving as a *lingua franca*.
- 28 The existence of a vehicular dimension, however, is not a licence to do anything, anyhow. Thus, in the case of the TNGM, certain popularisation techniques (such as stories, used in numerous countries to make people more environmentally aware) do not work; undoubtedly this is related to the importance of “face” in Java, which obliges everyone to remain in his or her role: thus the scientist must not pretend to be a story

teller or farmer, but must assert his or her knowledge and methods. Finding compromises between the different environmental ethics (Depraz, 2006) and developing a common territoriality therefore demands the respect of certain socio-cultural and socio-economic imperatives.

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NOTES

1. With Bertrand (2007), who concurs with Subrahmanyam, we prefer the concept of “intermixing” to that of “hybridization”.
 2. The expressions in Indonesian shown in brackets are those used by inhabitants; in the body of the text, we will generally use English.
 3. For more details about this concept and the relevant theoretical framework, cf. Bing, 2012.
 4. Articles and books read but not cited in this text have been omitted from the bibliography. Thus those of Mei, Belizal, etc. fall into this category.
 5. This term relates firstly to a syncretist religious practice and, by extension, to the vision of the world that it supports and imagines. It can be translated by “Javanity” (as it is here), but also by “Javanism” (political exploitation of Javanity by the *Orde baru* regime of General Suharto, referred to as “Javanese fascism” by the author P.A. Toer).
 6. *Hutan* forms an anagram of *hantu* (“ghosts” or “evil spirits”, in which belief remains strong). Although this may just be coincidence, the similarity of the two terms nevertheless appears to reinforce fears of the forest. Whether I was venturing into the forest or onto the Merapi at night, I was warned to take care because of the presence of these spirits (I must admit that I was more fearful, in the second case, of the drivers).
 7. To the extent that during the earthquake of 27 May 2006, and despite the fact that the town is situated at an altitude of 100-150m., more citizens preferred to flee Yogyakarta towards the North and the volcano, even though it had been erupting for about ten days, than towards the South and the sea because of fears of a tsunami.
 8. From *Nusantara* (“Archipelago”), this adjective designates all that relates to Insulinde before the emergence of the recent political constructions that are the States of the region.
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ABSTRACTS

The Javanese world is organized in the form of hierarchical concentric circles, with one of its limits being in the mountains. This particular limit is the realm of the supra-human (gods, spirits) as much as the infra-human (animals and wild plants) and should be approached with caution, through continual negotiation with the forces that inhabit the area. This holistic view of humankind's place in the world is increasingly contested, however, by a movement that has been powerful in Indonesia for some thirty years, mixing Islamisation and modernization. The process has modified the notion of border between human and non-human, not only from a symbolic and intellectual point of view but also in terms of spatial practices. A mix of knowledge and know-how seems to dominate all segments of the population, and confrontation between these types of knowledge is causing some very concrete problems concerning, for example, management and control of territories, and access to local resources, but is also leading to a renewal of territoriality linked to the margins of the ecumene, which are the forest and the volcano's crater.

INDEX

Keywords: Merapi Volcano, Javanity, forest, modernization, knowledge, territoriality

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