

The Itinerary of a North Vietnamese Surgeon: Medical Science and Politics during the Cold War

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This article argues that science was inextricably bound up with politics in the life and career of Tôn Thất Tùng. Nationalism motivated Tùng to join the Việt Minh fight against the French in the First Indochina War, but it was his colonial-era training as a surgeon that made him invaluable for the resistance. The widespread recognition of the Democratic Republic of Vietnam (DRV) in 1954 gave Tùng, in turn, access to human and material resources that would not have been available otherwise. With these resources, including equipment and human livers, Tùng developed surgical techniques that enabled him to publish in internationally recognised journals. In return, Tùng trained doctors for the state, focusing on knowledge that helped the DRV battle the Republic of Vietnam's and the United States' (US) armies. During the 1960s, Tùng engaged in medical diplomacy that allowed those against US intervention, yet uncomfortable with DRV politics, to support the North. For his part, Tùng tapped into his far-flung network to access the latest medical advances as well as obtain training for his students. These developments, international and domestic, came together in Tùng's struggle to identify and treat the effects of exposure to herbicides and their contaminant dioxin, popularly known as Agent Orange.

Introduction

IN A 1973 ARTICLE that appeared in *Nhân Dân*, the official newspaper of the Democratic Republic of Vietnam (DRV), the medical doctor Tôn Thất Tùng

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(1912–1982) reflected on his momentous decision to participate in the Communist-led national revolution.¹ One of the main themes of the article was the connection between Tùng and the North Vietnamese state. Tùng characterised this relationship as a gift exchange. With regards to his scientific career, Tùng stated that ‘now, after nearly thirty years, the Vietnamese revolution has brought me fame and a high position in medicine’. Tùng acknowledged the Party’s support that gave him access to the medical supplies and Vietnamese bodies necessary for an international reputation. In return, Tùng continued, ‘my scientific career will bring honor in connection with the process of struggle of the heroic Vietnamese people’ (Tùng, 1973). He recognised that he provided the Party with an intangible—and invaluable—commodity, a link to the outside world and a face to attract those sympathetic to the suffering of the Vietnamese people, if not to the Party itself.

By the end of his long career, Tùng had earned an international reputation as a medical doctor and ambassador of science. In 1981, one year before his death, Tùng gave an interview on WGBH Boston during which he recounted his early childhood and training under French colonial rule as well as his later participation in the Second Indochina War, also called the Vietnam War. His autobiography, published in Vietnamese as *Đường Vào Khoa Học của Tôi* (My Path to Science), has been translated into multiple languages, including French and English (Tùng, 1978). Medically, Tùng’s development of the liver-surgery technique known as *digitoclasié*, or finger-fracture, garnered praise from doctors across the world (Guénel, 2006). Politically, Tùng’s activities secured him the status of a Vietnamese national hero and a place in the Mai Dịch Cemetery alongside Lê Duẩn and other luminaries of the national and communist revolutions. Yet Tùng was an unlikely candidate for either an international medical reputation or status as a Vietnamese political hero. Trained under a racially restrictive colonial regime, Tùng laboured throughout his career in trying circumstances, using at one point a bicycle to generate electricity to run the lights needed for underground surgery (Krivine, 2005, p. 53). While many others in the North worked their way up the Party structure by following its dictates, Tùng continued to voice his own opinions, even when they contradicted those of the Party leaders.

Considering Tùng’s unlikely career, this article explores the mechanisms and meanings of exchange between this intellectual and the DRV state.² Tùng’s relationship with the Communist Party both circumscribed his choices and opened up opportunities that he skilfully exploited, giving him access to the materials necessary to create value outside of North Vietnam and to gain international recognition. Previously, after the ‘mandarins’ of metropolitan France had rejected Tùng’s pre-1940 surgical investigations on the liver, the colonial relationship that existed between France and Indochina meant that Tùng had no other outlets for publication. With the start of the First Indochina War (1945–1954), Tùng stopped his research and focused on military surgery and training. Finally in the 1960s, the backing of the North Vietnamese state enabled Tùng to resume the liver investigations that formed the basis of his publications in journals such as *The Lancet*

(Tung and Quang, 1963). Thus, an examination of Tung's life shows the role that post-coloniality, state patronage, and international affairs played in producing the boundaries between science and politics in the DRV (Krige and Barth, 2006).³

In addition to the politics of North Vietnam, Tung artfully navigated the circulations, exchanges, and values of international biomedicine, using the friction between local and global simultaneously to reinforce and to escape the confines of nationalist science (Tsing, 2005). In the 1970s, encouraged by the Party and the logic of his scientific career, Tung turned to investigations of the effects on Vietnamese bodies of herbicides and dioxin, commonly known as Agent Orange. Wholly unequipped to carry out such challenging investigations into environmental toxicology, Tung did not produce results accepted by the international biomedical community. For Tung, however, medical research was more than just a way to build a career and his involvement in Agent Orange research shows us 'what practical ethical engagement looks like' for a medical doctor in a place that became not so out-of-the-way during the Cold War (Anderson, 2008, p. 6). In other words, both Tung's identity as a revolutionary Vietnamese and as a cosmopolitan scientist during the Cold War informed his ethics.

Susan Bayly's recent writings place the family at the centre of travel narratives and investigate the ways in which North Vietnamese intellectuals linked their individual activities to those of state and nation building (Bayly, 2007). Bayly uses familial relationships to challenge the Party's control over the narratives of the national and socialist revolutions by showing that individuals could pursue their own interests while simultaneously acting in ways that they believed would aid the revolution. This article seeks to shed light on the links between North Vietnamese intellectuals and the global profession of biomedicine. Focusing on biomedicine reveals how disciplinary norms circulating through the medical profession in places such as Beijing, Moscow, Paris, London, and Washington, DC further structured the options available to Tung and his colleagues and the meanings generated by their actions. These norms meant that the character of the material exchanged mattered for how Tung and his writings circulated in both the socialist and the capitalist ecumene. In this way, surgery on easily extractible livers earned Tung recognition by his medical peers while research on refractory dioxin molecules helped Tung develop political networks (Martini, 2012; Zierler, 2011). Not every Vietnamese intellectual moved so easily between the socialist and capitalist worlds in these different ways, but Tung's life shows that the boundaries between ecumeni could be porous, at least for specific individuals at particular times and places.

This article begins with a brief overview of Tung's childhood and medical education during the colonial period. Tung's experiences show clearly the limits of the colonial situation for Vietnamese biomedical doctors. His education, however, presented him with an opportunity to forge an identity as a liver surgeon, a chance that he seized and used to form other identities. The article next covers Tung's life during the First Indochinese War that lasted from 1945 to 1954. It was during this period that Tung began to forge a deal with the Vietnamese Workers' Party (VWP). In exchange for his dedication to military medicine, which included the training of

future doctors and his personal surgical work at Điện Biên Phủ, Tùng was granted access to material and human resources. Not all categories of intellectuals were given the same bargain as the suppression of the *Nhân Văn Giai Phẩm* movement shows (Ninh, 2002).

The article then moves to the late 1950s and 1960s when Tùng served in the role of medical diplomat to socialist countries such as the People's Republic of China (PRC) and the Soviet Union (USSR). During the 1960s, Tùng also restarted his surgical work on the liver and published articles that won him international fame. Tùng gradually built an untouchable reputation, one that he employed to speak his mind freely, especially regarding medical matters, while agreeing to keep criticisms of the VWP muted in public contexts. Finally, until Tùng's death in 1982, he turned his attention away from surgery and towards the study of the effects of Agent Orange. These studies helped promote the cause of North Vietnam internationally. This research allowed Tùng to develop a relationship with Jean Michel Krivine, a French medical surgeon and Trotskyite, who testified at the Russell Tribunal for American War Crimes during the Vietnam War (Krivine, 2005).

The sources for this article include twenty-eight diaries that span the period from 1951 to 1975, housed at the Centre for Heritage of Vietnamese Scientists and Scholars.⁴ They include both reflections on travel as well as scientific notes covering different medical issues of concern for Tùng. His diaries contain many of the same topics discussed in his 1978 autobiography and issues raised in his interview with WGBH. While the diaries seem to have formed the basis for his autobiography and are often quite sketchy, they show some interesting differences and omissions. As a public intellectual with suspect royal heritage, Tùng could assume that his diaries would be under regular scrutiny. Tùng records in his autobiography a joke from Hồ Chí Minh about Tùng's 'cidevant' or aristocratic background and even though Tùng and Hồ genuinely admired each other, this joke acknowledges dangerous family ties (Tùng, 1978, p. 54). Tellingly, the diaries of Đặng Thùy Trâm, a young North Vietnamese medical doctor whose writings were recovered by an American soldier after she was killed in 1968, record distress at similar slights received based on family background (Đàng, 2007).

Medical Education

Recounting some of Tùng's early life helps situate events later in his career. Tùng was born on 10 May 1912 in Thanh Hóa in the northern part of central Vietnam. This region called Annam had been a French protectorate since 1883 and part of the Indochinese Union (composed of Cambodia, Laos, and Vietnam) since 1887. Tùng was the youngest child in a family that belonged to a branch of the royal household. Thus, when Tùng's father died shortly after Tùng's birth, he moved with his family to Hue, the location of the Imperial Court since the beginning of the Nguyễn dynasty in 1802. By the early 1900s, mandarins in Hue had come under heavy criticism from anti-colonial activists for their corruption and readiness to accept French

political and military domination and Túng developed a strong antipathy toward these figures. Even though Túng's mother encouraged him to become a mandarin, Túng turned to a French education and he left Hue in 1931 to study at the *Lycée du Protectorat* in Hanoi. After earning his *baccalaureat* degree at the Lycée, Túng enrolled in the Faculty of Medicine at the Indochina University in 1934.

Created in 1902, the Medical School of Hanoi was the oldest branch of the University. After the Medical School became a Faculty of Medicine in 1933, students could receive their degrees based on education in Indochina and Túng and his classmates were the first Vietnamese doctors to pursue their training exclusively in Hanoi. In 1935, Túng was placed as an extern at the '*hôpital du protectorat*' (Yersin hospital), where students had received practical experience since 1902. Yersin hospital specialised in surgery and as an extern, Túng became interested in the liver and surgical approaches to its pathologies. As a student, Túng served as the laboratory assistant for the French surgeon Pierre Huard. While conducting an autopsy on a body whose liver was infected with ascaris, Túng envisioned a new method for understanding the liver's anatomy. Tracing the path of the ascaris with a curette led Túng to believe that dissection would better uncover the liver's structure than radiologic exploration or corrosion, the two techniques then in use.

Normally, after completing two years of study, students took an exam to qualify for the post of intern. Being one of the first Vietnamese to apply for an internship, Túng had to convince the French authorities to allow him to take the exam. In 1938, Túng became the first Vietnamese intern, a position that allowed him to undertake his investigations on the vascularisation of the liver at the Hanoi Institute of Anatomy as well as to maintain his place at the hospital. In 1939, Túng defended his medical thesis, *La vascularisation veineuse du foie et ses applications aux résections et lobectomies hépatiques*, which drew from his experience of dissecting more than 200 livers (Túng, 1939). The Paris Faculty of Medicine awarded his thesis a Silver Medal. In that same year, Túng performed the resection of a tumour in the left lobe of the liver together with one of his professors. For this technique, the blood vessels were progressively exposed and ligatured at the point where they entered the hepatic parenchyma. Yet, when the report was sent to the Academy of Surgery in Paris, it was strongly criticised. Moreover, a patient suffering from a massive hepatoma died during the operation. Because of these developments, Túng had to stop his work on this technique for the time being. He continued other medical work and late in 1945 he published *Chirurgie des pancréatites aiguës* (Surgery of Acute Pancreatitis) (Túng, 1945).

During World War Two, Túng focused on investigating ascariidiosis and his insights into the nature of the colonial situation evolved during these experiences. In his autobiography, Túng lists the biological reasons for particular diseases related to the presence of intestinal worms noted in Vietnamese and other Asians. Ultimately, he concluded, among 'the main reason[s] for the diseases caused by *đũa* worms (ascarid), *phù tụy* inflammation or *đường mật* gall stones, the largest part is due to the poverty of our working people'. This realisation had political

consequences for Tùng and he began to consider his ability to perform surgery of limited utility to the people of Vietnam. ‘The hardships of our people,’ he reasoned, ‘are because we suffer from the aggression and exploitation of imperialists, my ability to operate will not be able to save our people but the colonial exploitation must be abolished’ (Tùng, 1978, p. 41). A life of science was not enough to cure the people; only the revolution could do so and Tùng enthusiastically joined the new Vietnamese government proclaimed by Hồ Chí Minh in August 1945.

First Indo-Chinese War

In the late 1940s, the Việt Minh were engaged in a fierce battle for survival with the French. Starting in late 1946, when Tùng left the Yersin hospital to join the resistance, he and other medical doctors operated a mobile hospital and medical school in Chiêm Hóa in northern Vietnam. Tùng worked effectively and in 1948 he became vice minister of health. As Christopher Goscha has recently shown, wartime conditions and state-building needs gave Vietnamese medical doctors no choice but to focus on military medicine.⁵ The difficult early years of the First Indochina War forced the Việt Minh medical personnel to find innovative solutions, including the use of a bicycle to generate electricity. How representative was Tùng’s decision to go to the maquis? By most measures, Tùng was exceptional. Notably, not more than one third of medical doctors trained by the French chose to follow Hồ Chí Minh into anti-colonial resistance (Goscha, 2011). This is not to say that many medical doctors were not nationalists but for either personal, familial, or ideological reasons, most chose not to follow the Việt Minh.

After the 1949 victory of the Chinese communists under the leadership of Mao Zedong and the founding of the PRC, the Việt Minh gained an important, if problematic, ally. At this time, the Việt Minh desperately needed Chinese medical supplies and training and towards these ends, Tùng often travelled there. Starting in May 1951, supplies from the USSR also began to cross the North Vietnam–China border. Between 1952 and 1954, the Việt Minh received over 100 tonnes of medical supplies and equipment from China and the USSR. It is important to note that medical doctors also turned to traditional Vietnamese practices. In his 1981 WGBH interview, Tùng does mention using ‘herbs’ to treat the wounded. Yet, Tùng does not discuss traditional medicine in his diaries until the 1970s and even then Tùng employed biomedical discourse to show efficacy (Wahlberg, 2012).

Tùng conducted very little of his own research on livers at this time, serving rather as a medical representative for Vietnam. To help shore up the support of the PRC, Tùng travelled to China in July 1951 with Hoàng Quốc Việt, a leader in the Indochinese Communist Party. He arrived in Peking (Beijing) on 28 July and proceeded to carry out both political and medical exchanges. His diaries record a meeting with the Vietnamese ambassador, though it seems that Tùng did not become too involved with political duties narrowly defined. In this way, Tùng was more

of a goodwill diplomat, a symbol of ‘liberated’—that is, socialist—science.⁶ The number of languages that Tùng dealt with also led to some comic misunderstandings as when having requested to speak with Chinese surgeons, Tùng was sent autopsy specialists instead.

Tùng focused on learning medical techniques that would be helpful in the Việt Minh’s fight against the French. In his official autobiography, Tùng offers a strongly positive evaluation of China’s medical system. ‘In Beijing,’ he wrote, ‘in 1951, the medical profession, in particular surgery, was very sure’. Tùng visited the ‘Hôpital de la Concorde’ or ‘Bệnh viện Hiệp Hòa’, as Tùng called it, formerly the Rockefeller hospital. During the week he spent there, Tùng read on surgery techniques of World War Two. He later attributed to this study session his ability to treat skull and brain injuries at the battle of Điện Biên Phủ in 1954 (Tùng, 1978, p. 63). Of course, it is not surprising that compared with conditions in Chiêm Hóa, the resources that could be mustered in Beijing were impressive. Tùng could be a bit more circumspect in his diaries than his autobiography about medical conditions in China, noting in particular a lack of equipment in certain places.⁷

The year 1951 also marks the first year recorded in the diaries housed at the Centre. The entries from this time were written mostly in French, with some Vietnamese along with Chinese characters and other languages sprinkled in. The cover of the 1951 diary, for example, was written in French. Yet, by the 1970s, the diaries were almost exclusively written in Vietnamese. Tùng grew up speaking Vietnamese at home and he spent most of his educational years in Vietnam so it is natural that he was fluent in that language. But his intellectual tongue, and the language of medicine, was French and so it is not surprising that Tùng used French when writing. Due to teaching needs and the politics of the DRV, Tùng gradually switched to using mostly Vietnamese and decisions like these show some of the ‘pains and perils’ of being an intellectual (Bayly, 2007).

Continuing his work as a medical ambassador, Tùng next visited the Democratic Republic of Korea (DRK). In August 1951, the fighting on the Korean peninsula was intense and Tùng witnessed the regular bombings of Pyongyang. He noted in his diary how the residents of Pyongyang had come to know the schedule of what he called ‘American’ bombs. ‘The people were underground; life continued outside but the shelters were quite sparse,’ he said.⁸ Tùng also wrote sympathetically about the North Koreans he observed, whose experiences were eerily similar to later accounts of life in Hanoi during the US bombings of the 1960s. ‘Those who were injured didn’t call out, those who were living didn’t cry for the dead. Very heroic: North Korea bore the burden in a way worthy of admiration.’⁹ Such passages raise questions about the mental health of this wartime population.

Yet, in terms of medicine, Tùng thought that the Việt Minh had little to learn from North Korea. For instance, when North Korean medical doctors wanted to introduce a supposedly novel cast technique useful for the battlefield, Tùng simply noted that Vietnamese medical doctors had known of the technique since 1946. Tùng

further noticed the lack of a medical school in North Korea, a situation also faced by the Việt Minh (Tùng, 1978, pp. 47, 67). Tùng stayed in China until Christmas but his diaries end on 21 October. It is not clear what Tùng did or thought during that time but he did miss home. ‘I think,’ he wrote, ‘that I can be of more use at home than here. How is the school? How is surgery for the soldiers?’ (Phạm, 2011, p. 225). Upon returning to North Vietnam at the end of 1951, Tùng threw himself into military medicine as the fighting between the French and the Việt Minh grew more intense, resulting in higher battlefield casualties.

After the Việt Minh victory over the French at Điện Biên Phủ, Tùng took the directorship of the Yersin Hospital, which was renamed the Việt-Đức (Vietnamese–East German) Hospital in 1956. Tùng continued to build his reputation and as early as 1958, he had performed the first open-heart surgery in Vietnam. By the 1960s, the conditions of the North Vietnamese medical system had changed drastically. The medical service was gaining new confidence along with foreign assistance, not only from the Soviet Union and China, but also from friendly individuals in capitalist nations such as France. This support finally enabled Tùng to return to his work on the liver and his diaries from the 1960s hold a collection of scientific articles and photographs dealing with knowledge about surgery.

In particular, Tùng studied the work of Jean-Louis Lortat-Jacob and others on the hepatic ‘planned’ resection, a surgical technique that called for the dissecting and crushing of the vessels outside the liver. This surgery was difficult and called for extensive training, which made it of little use in places such as North Vietnam, where there were few medical experts. In 1961, Tùng began experimenting on how to make the procedure shorter and more accessible to the generalist, a so-called ‘democratisation’ of the technique (Krivine, 2005, p. 11). Military necessity also provided an incentive for this democratisation, as operations on the battlefield needed to be as simple and quick as possible. The speed of Tùng’s innovation, called *digitoclasie*, came in using the fingers to open the parenchyma followed by clamping the vessels inside the hepatic tissue. This process lasted less than 10 minutes and was applied to about fifty patients in the first year.

Tùng described his invention in an East German review and in 1962, Tùng published in Hanoi a book-length account of his method, called *Chirurgie d'exérèse du foie* (Tùng, 1962). Appearing first in French, and later translated into other languages, this publication earned Tùng fame in the socialist ecumene and contributed to his election to the USSR Academy of Medicine three years later. Tùng then had his technique described in the pages of *The Lancet*, giving him recognition in the capitalist ecumene. In 1964, Tùng travelled to France where he demonstrated his technique personally, helping to bring him to the attention of Jean-Michel Krivine. Six years later, Tùng became a member of the Paris Academy of Surgery. Tùng’s existence in the biomedical world thus allowed him to move between the socialist and capitalist ecumene in interesting ways and his growing reputation allowed Tùng to carry out medical diplomacy for the DRV as it negotiated with the Soviet Union and China and their diverging approaches to the Vietnam War.

China and the Soviet Union

Views of the Cold War have been largely shaped by material from Washington, Moscow, Beijing, Paris, and London. From these high perches, nuclear weapons dominate understandings of Cold War science and diplomacy. Yet on the ground, Cold War science looked different and disciplines such as medicine and agriculture exercised control over daily practices and meanings. While US policy sought to contain nuclear scientists, for example, figures such as Tùng showed how medical doctors could travel within and between ‘closed worlds’ (Edwards, 1996, pp. 12–15). The closed worlds referred to here are the USSR and the PRC, whose leaders had grown antagonistic by the 1960s. Dealing with Soviet-Sino relations and medical exchange after 1954 would take more space than is available, so this article focuses on a single event in which Tùng participated—the 1964 Peking Scientific Symposium. Now largely forgotten, there was much excitement surrounding the symposium, which lasted from 21 to 31 August, and had an attendance of 367 delegates from 44 countries. One English-language article in *Vietnamese Studies* claimed that the Symposium would be ‘a historic date in international scientific life’ (C., 1965).

By this time, Tùng was something of an elder statesman and he presented a report on his continuing work on liver surgery (C., 1965, p. 5). Tùng was in Peking from 13 August to 4 September, but his journal is rather quiet on what he did and thought while there. Tùng also seems to have passed over discussion of the Symposium in his autobiography. Instead, Tùng wrote extensively about his subsequent trip that took him to Paris, Prague, Albania, Budapest, Moscow, and eventually back to North Vietnam via Peking. Tùng gave quite detailed accounts of his time in Paris, discussing the hospitals he visited and the medical doctors he talked with, mostly about liver and heart surgery.

From the US perspective, this Symposium was notable for the absence of the Soviet Union and other so-called ‘white’ delegates (‘Quarterly Chronicle and Documentation’, 1964). A US-government analyst in Munich wrote, for instance:

What is unique about this meeting is the complete absence of Eastern European or Soviet delegates who, for the Chinese, represent the ‘white race’, and as such are not welcome at the conference. Wrapped in a scientific garb, the Peking Symposium, will be one of the Chinese attempts to create an exclusive club of Asians, Africans and Latin Americans run under the label: ‘Coloured Only.’ [Peking’s (Beijing’s) Scientific Symposium: A preview, 1964].

From this quote, it may seem that Asian networks were becoming more important than socialist networks for North Vietnam. This racial reading of the 1964 Symposium, however, seems to have had more to do with what was going on in Mississippi and New York than in Peking. That is to say, domestic concerns about the civil rights movement tainted one observer’s views of the Symposium, raising the white nightmare of resurgent, and exclusionary, coloured races.

Medical doctors from North Vietnam never cut off communication with their non-Asian counterparts and these interactions only grew more numerous during the 1960s. The *Vietnamese Studies* article referred to earlier also emphasised that ‘men so different in race, colour, language and political, religious and philosophical conceptions’ all attended the 1964 Symposium (C., 1965, p. 1). What caused the absence of the Soviet delegates was the well-known tension that existed between China and the Soviet Union. In the *Vietnamese Studies* article, both imperialism and ‘modern revisionism’ were singled out for criticism rather than a ‘white’ race.

In addition to recording his travels, Tùng gave glimpses of what he thought about science in North Vietnam. Tùng opened his diary from 1961 to 1965 with three quotes, including one from Einstein on the importance of tradition, one about how surgeons and medical doctors also needed to be humanists, and one from Michael Angelo about the danger of the ‘hand being higher than the head’. Later in his diary, Tùng refers to Aldous Huxley’s novel *Brave New World* and includes some poems of loss and regret.¹⁰ While this is rather fragmentary evidence, it raises the possibility that Tùng was feeling some doubt about North Vietnam’s political control of medical science.

As Christopher Goscha has shown, even during the First Indochina War, political cadre in the Workers’ Party were looking to assert their authority over medical science. For instance, in reporting on the Peking Symposium of 1964, an author in *Vietnamese Studies* rhetorically asked: ‘Should worthy and self-respecting men of science confine themselves to laboratories, libraries and lecture rooms as “contemplators” and “mediators” of history, which is being made also “for them” but maybe “without them” and “in spite of them”?’

The unsurprising answer immediately followed:

There can be no ‘science for science’s sake’; nor can there be ‘science without conscience’. To struggle for an advanced science is to struggle against those who are trying to suppress it, in a word to struggle against imperialism, and first of all against American imperialism, for liberty, national independence and peace! (C., 1965)

And just in case the reader was especially dull, the article continued that ‘science must be in the service of the struggle against imperialism’. Regardless of what Tùng thought privately, North Vietnam’s links with its socialist patrons—the USSR and China—had helped build a national health care system. Tùng’s diaries possess, for example, a speech from 1968 in which he thanks the Soviet Union for training thousands of researchers and students in their universities.¹¹ Such support could not be ignored.

Meanwhile, driven by the Cold War ideology of the ‘free world’, France, the US, and other nation-states in the ‘West’ offered more autonomy to individual scientists. This autonomy may have appeared to clash with the calls of Vannevar Bush and other scientific leaders for their disciplines to contribute to national

defence. Science studies scholars, however, have resolved this seeming paradox by showing how the US government adopted a discipline-based, rather than individual-based, strategy of control of science, more dependent on management of research funds and educational opportunities than individual oppression (Kaiser, 2002; Leslie, 1993; Mukerji, 1989).

At the conclusion of the 1964 Symposium, a report on ‘The Use of Toxic Chemicals as a War Means by the US Imperialists and Their Stooges’ was given. The US military’s spraying of chemicals such as tear gas and herbicides, along with brutal bombing tactics, drove a number of observers to form the International Vietnam War Crimes Tribunal, also known as the Russell Tribunal, thanks to its sponsor the philosopher Bertrand Russell. As part of this tribunal, Jean-Michel Krivine, a young medical doctor and member of the French Communist Party, travelled to North Vietnam from 17 February to 23 March 1967, and then to the ‘liberated’ zones of South Vietnam from 16 to 30 September that same year. As part of his visit, Krivine met several Vietnamese doctors, including Tùng and Phạm Ngọc Thạch, then Minister of Health for the DRV. Although Thạch died in the jungles of South Vietnam a year later, Tùng and Krivine continued their relationship, which developed into a genuine friendship.

As a Trotskyite, Krivine formed a critical view of the manner in which the Stalinist VWP governed the north. Among other things, Krivine criticised the ‘bureaucratic’ approach to rule that stifled free thought and dissent among government officials, party members, and citizens and prized loyalty above all else. Yet, opposition to the Vietnam War in general and to American use of herbicides in particular could trump otherwise deadly divisions in the socialist world. Moreover, on a personal level, Krivine found Tùng refreshingly frank and open to discussion and despite his ‘authoritarian character’, Krivine thought Tùng was a ‘deeply good and warm’ person. According to Krivine, Tùng facilitated medical circulation between France and Vietnam, including the exchange of cardio-vascular surgeons between the Việt-Đức Hospital and the Laënnec Hospital of Paris and, later, the internship of Vietnamese surgeons at the Eaubonne Hospital and others in the Val-d’Oise (Krivine, 2005, p. 11).

Tùng maintained his interest in diseases that affected the Vietnamese population, including ‘tropical hemobilia,’ which involved the haemorrhage of the biliary ducts arising from non-traumatic origin. He also persisted in his work on the liver, discovering the cause of ‘capsular hematoma’. These two concerns came together in Vietnamese bodies exposed to herbicides, and investigations into the effects of Agent Orange occupied Tôn Thất Tùng for the rest of his life.

Agent Orange

During the 1970s, Tùng set up a laboratory to investigate the effects on Vietnamese bodies of herbicides and dioxin spread in South Vietnam. Despite Tùng’s continuing interest in the liver, this moment marked a shift in his scientific career, as his

research took on a much more explicitly political character. The laboratory's studies on genetic effects of these chemicals, undertaken in cooperation with a Chinese team, showed chromosomal alterations. Tùng even provided mechanisms by which herbicides and dioxin could afflict those in the north, including the mixing of populations, the movement of insects and birds, and the action of ocean currents. Along with many other scientists across the world, Tùng attempted to make visible the negative consequences of the US military's actions for the people and environments of Vietnam and put into numbers the connections between herbicides and the birth defects and other forms of suffering inflicted on people living in Vietnam.

Through his work on Agent Orange and dioxin, Tùng developed a tight network of correspondents in France, both French and overseas Vietnamese, and many of his diary pages from 1970 document Tùng's efforts to enrol sympathetic people in the struggle against the US military's use of chemicals. Buu Hoi, a famous French medical doctor, discussed with Tùng the intricacies of dioxin, the industrial contaminant that was seen as the most dangerous component of herbicides. Tùng also cited a Bionetics study of herbicides and dioxin that was most likely the 1969 US National Institute of Health study on mice, which provided some of the earliest scientific confirmation of the potential teratogenic effects of herbicides. Furthermore, because of the carcinogenic properties of dioxin, Tùng became interested in the immuno-stimulant properties of a substance called LHI. Based on traditional Vietnamese medicine and developed by a Franco-Vietnamese researcher, Tùng drew this drug's structure and gave its scientific properties in his journal.¹²

'Vietnamese'-style science had its supporters in the US as well. The Marxist biologist Richard Levins, for example, judged that the North Vietnamese scientists were more egalitarian than their American counterparts. Furthermore, North Vietnamese scientists addressed both 'applied' and 'pure' questions without necessarily distinguishing between the two, an apt characterisation of Tùng's work on Agent Orange (Zimmerman, 1971). In addition to basic research, Tùng sought to stop the use of herbicides (which happened in 1971) and to mitigate the effects of dioxin. He noted both the immediate consequences of Agent Orange, the '*effets écologiques*', as well as the 'danger for generations to come'.¹³ Tùng's research showed an increase in liver cancers connected to the use of defoliants after 1962 and while these results did not win wide acceptance in the scientific community, they did convince Jean-Michel Krivine (Krivine, 2005, p. 8).

Perhaps one of Tùng's closest international contacts was with Krivine and the two surgeons exchanged numerous letters. Tùng and his wife, Vi Hồ, also became quite close to Krivine and his wife, Jacqueline, and Vi Hồ and Jacqueline wrote directly to one another. Susan Bayly's findings about the lives of Vietnamese 'experts' (*chuyên gia*) in post-war (1954), post-independence (1975), and post-*Đời Mới*, or renovation, (1986), worlds provide a useful lens through which to view Tùng's life and his correspondence with Krivine. Bayly points out that experts' overseas service was 'a means of providing materially for their families through participation in a

world of long-distance “grey-economy” trading operations’ (Bayly, 2007, p. 184). Tùng’s travels to France resulted in intern opportunities for Vietnamese surgeons during the 1980s and through Tùng’s correspondence, he was able to acquire and share information on the effects of Agent Orange and arrange for reciprocal visits between Krivine and himself. Thus, when Krivine returned to North Vietnam in June 1975, a little more than a month after the fall/liberation of Saigon, he and Tùng could enjoy a tourist trip to Halong Bay at a time when resources were scarce.

Tùng’s medical career continued to develop and in 1979, he published a book on liver surgery, *Les résections majeures et mineures du foie*, that became a standard reference in the field (Tùng, 1979). This monograph, based on more than 700 hepatectomies throughout his career, received the extremely prestigious International Surgical Medal. While not many surgeons outside of Vietnam still practice Tùng’s method of *digitoclasié*, he remains known as the ‘father of Vietnamese surgery’. Tùng’s thoughts about the post-independence Vietnam are more elusive. In 1975, near the end of Tùng’s diaries, he records going back to Hue for a forlorn visit to his childhood town. Tùng noted the signs of defoliation and criticised the disorder of the ‘consumer society’ of the south.¹⁴ These reflections did not make it into Tùng’s autobiography and in the difficult aftermath of the Vietnam War, there was little time and energy for reflection and sadness at the destruction that had passed. Tùng was notoriously independent minded and it is possible that he, like Krivine, felt betrayed by the Party’s imprisonment of ‘between one and two hundred old militants...accused of Khrushchevite “anti-party revisionism”’. Or did Tùng realise that the VWP ‘could brilliantly lead a war of national liberation...but proved itself incapable of breaking from the Stalino-Maoist mould to build a new society in times of peace’ (Krivine, 2005, p. 9)?

The two sides of Tùng’s life in Vietnam during the Cold War, the scientific and the political, were inextricably linked. Neither side can be ignored in an attempt to understand why, how, where, and when Tùng engaged in and enabled different patterns of circulation. Even though Tùng projected an image of scientific authority independent of political power and dressed down incompetent party bureaucrats when he saw fit, he utilised both political and scientific legitimacy as he fashioned local and global identities.

Conclusion

Through a selective retelling of Tùng’s life, this article engages in a discussion about shifting strategies of performing ‘Asian’ biomedicine during the twentieth century. It argues that Tùng participated in both local and global circulations as he constructed his identity as a nationalist revolutionary and biomedical doctor in North Vietnam. It shows what Tùng gained from the Communist Party, what was expected from him in return, and how he manoeuvred personally and professionally in the social and political milieu of North Vietnam. Rather than provide a complete biography of Tùng, this article discusses certain episodes in his life, highlighting the meanings

of these events. It begins with Tùng's childhood and his medical training and early success during the French colonial period. It then follows Tùng to the maquis and in his travels in the socialist world. Even as Tùng gained political experience, he maintained his interest in liver surgery. Finally, this article considers Tùng's work on Agent Orange and his relationship with Jean Michel Krivine.

Committed to the project of expanding biomedicine in Vietnam, Tùng contributed to a 'Vietnamese' biomedical project. But Tùng did not define his career in racial terms and he remained ecumenical in his approach to knowledge and techniques. He held onto his French training even as he adapted the skills he had learned to new situations. This article's examination of Tùng merely suggests some of the broader issues concerning the movement of Vietnamese medical doctors and other intellectuals during the Cold War, a topic calling for further research. Tùng's life also has useful lessons for those looking to promote an inclusive Asian identity built around science. Even as certain issues threaten to divide societies in the region, projects such as Asian Biopoleis have the potential to unite. Whether this potential will be realised, end as a utopian dream, or succumb to conventional nationalist interests remains to be seen. It will be up to those involved in the project to be both aware of science, technology, and medicine's inherent potential to divide while nurturing the equally inherent potential to unite. Examinations of past mental and material networks built around medical and political accomplishments are essential for finding new ways of imaging global scientific identities.

NOTES

1. When available, diacritics are used for Vietnamese names in order to ease identification. Diacritics are left off for common place names such as Hue, Hanoi and Vietnam.
2. Thanks to Achim Rosemann for foregrounding the question of gift exchanges and for asking about the expectations and obligations on all sides of the transactions.
3. While the work of post-coloniality, state patronage, and international affairs in shaping science have been explored in the United States, Europe, and South Asia, among other places, little work has been done in the context of Vietnam.
4. Tùng's diaries were donated by his family to the Centre for Heritage of Vietnamese Scientists and Scholars and the authors would like to thank the Centre for its kind welcome. The Centre is located in Hanoi, Vietnam and is sponsored by the medical technology and testing company MEDLATEC.
5. Works by Vannevar Bush show that the US government, too, openly sought to enroll scientists and engineers in nationalist projects (Bush, 1946).
6. Centre for Heritage of Vietnamese Scientists, Tùng Journal 1: 11. Afterwards, these journals are abbreviated as Tùng Journal followed by a specific name or number.
7. For an enlightening discussion of various sciences in China in the twentieth century, see essays by Benjamin Elman, Fa-ti Fan, and others in the focus section of *Isis* issue 98, published in 2007 (Elman, 2007; Fan, 2007). One difference between the history of science in China and in Vietnam is that Vietnamese scientists never experienced anything like the Cultural Revolution.
8. Tùng Journal Corée, 1951, pp. 45–46.
9. Tùng Journal Corée, 1951, pp. 86–87.
10. Tùng Journal, 12, 1967, p. 69.
11. Tùng Journal, 12, cover.
12. Tùng Journal, 10, 1974, p. 23.

13. *Tùng Journal*, 8, 1970, p. 25.
14. *Tùng Journal*, 11, 1975.

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