

Technology impacts on drug production in Asia: The role of amphetamines in Asia's growing drug problem

This paper was presented by Dr Sandy Gordon on behalf of Commissioner Keelty at a conference on the Global Economy of Illicit Drugs held in London during June 25-26, 2001.

Prepared with inputs from the Strategic Intelligence Team.

In the mid 1990s there was a rapid expansion of the production of amphetamine type stimulants (ATS) in Burma that coincided with a drop in heroin production in the same region.

This article considers the background to those developments and examines whether ATS displaced heroin or was developed alongside existing heroin production.

This question is important in assessing whether Burma might step in to fill the heroin production vacuum left by the Taliban ban on opium growing in Afghanistan.

Opium was extensively used throughout East Asia in the nineteenth century, where it was sponsored and sold by the British. It was grown widely throughout the region, but most prominently in British India and Yunnan Province, China.

Throughout the first half of the twentieth century it was still extensively grown in Yunnan. But as the Communist government tightened control in China in the 1950s, production was forced out of Yunnan and expanded in the adjacent areas of northern Burma.

Heroin – which is a derivative of opium – has been used as a source of income for Burmese

separatist groups since then, with the market expanding considerably at the time of the war in Vietnam. The role of Burmese production also became more prominent with the success of a long-term crop substitution program in northern Thailand.

Although the history of amphetamine type stimulants (ATS) in Asia is not nearly as extensive as that of heroin, this class of drugs also have a relatively long history in the region. Amphetamine was used to give troops endurance in the Second World War. Today ATS use in Asia involves two principal classes: methamphetamine and those drugs related to the methylenedioxy-methamphetamine, or ecstasy, group.

Methamphetamine is a strong stimulant drug



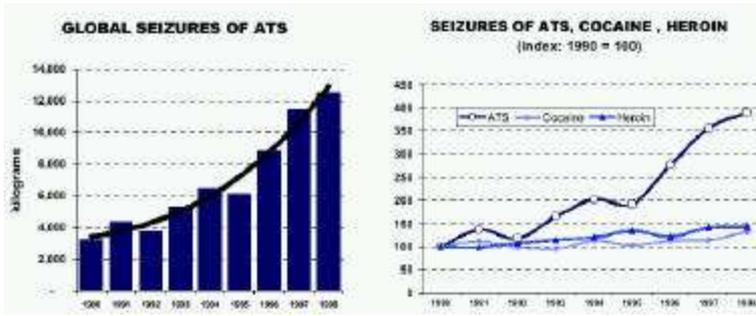


Diagram 2: Global ATS seizures 1990-1998 by weight.

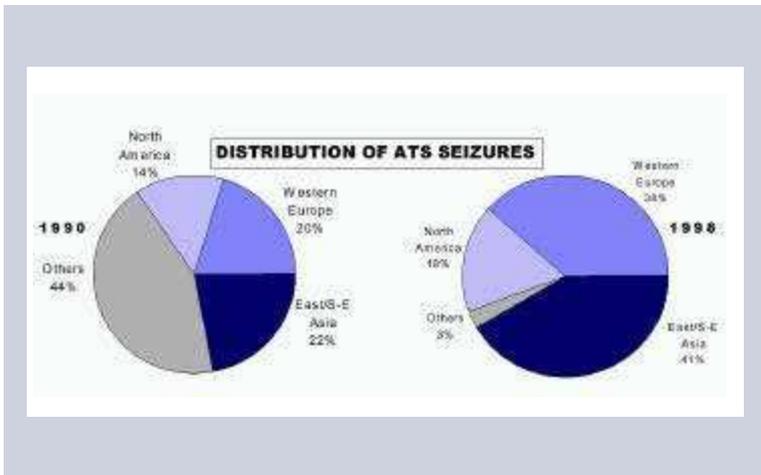


Diagram 2: Global ATS seizures 1990-1998 by location.

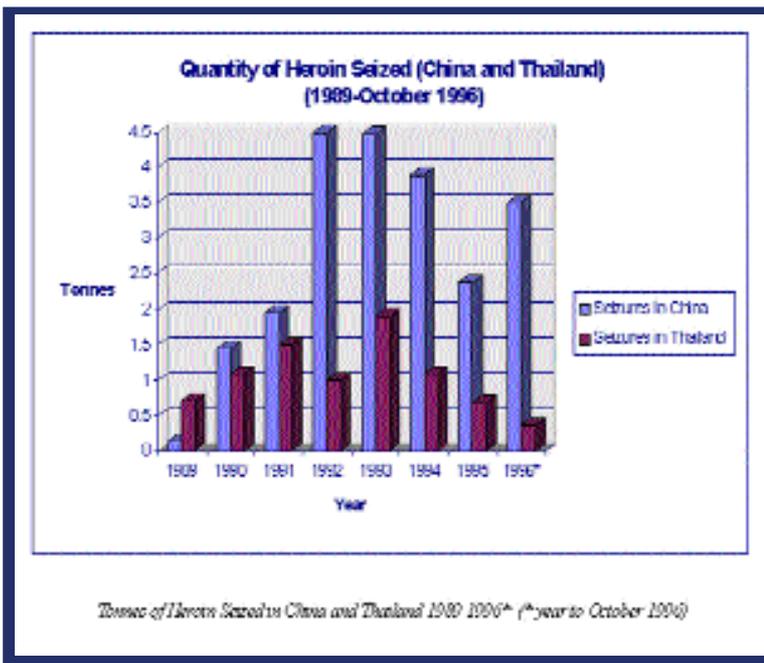


Diagram 3: Quantity of heroin seized in China and Thailand 1989 to October 1996.

that comes in two main forms in the Asian region – tablets or crystals. Tablets are known as *ya-ba* (literally 'crazy medicine' in Thai) in the main consuming areas and consist of approximately 25 per cent methamphetamine, 70 per cent caffeine, and the balance non-active ingredients to provide odour and colour. Use of *ya-ba* became widespread in Thailand in the 1980s, where it was popular with those involved in arduous occupations such as truck driving, construction and the entertainment industry.

Methamphetamine in the high purity crystal form (approximately 80 per cent pure) is known by names such as *ice*, *shabu* (Philippines), *syabu* (Malaysia), and *philopon* (Korea). This class is usually consumed by smoking, but may be dissolved and injected. *Ice* is widely used in east Asian countries, especially Japan, Korea and Taiwan. In south East Asia it is also extensively used in the Philippines and becoming increasingly popular in Indonesia.

Drugs in the ecstasy class are used for their combined stimulant and euphoric effects. Typically they are consumed as tablets.

Global ATS seizures (diagram 1) rose dramatically between 1990 and 1998. The increase in ATS seizures was relatively far greater than for heroin and cocaine. Moreover, the increase in ATS seizures was far greater in Asia than elsewhere. While seizure rates do not necessarily correspond with production, they can be a good indicator of production trends.

The rise in ATS use in Asia

A number of factors led to the growth of ATS use in Asia and the increasing salience of Burma in the production of this class of drug.

One of the most important was economic development. According to the World Development Report 2000, the East Asia-Pacific region's average GDP grew by 8 per cent in the 1980s. Even though the region suffered a major economic down-turn in 1997, growth still averaged 7.4 per cent in the 1990s. This compares with growth rates for the world as a whole of 3.2 per cent in the 1980s and 2.5 per cent in the 1990s.

Although there are clear benefits from development, it can also bring harm, especially in the social sphere. In Asia, rapid urbanisation and development increased working hours in the building, transport and service industries, resulting in major labour market dislocation. Consumption of amphetamines helped workers cope with these longer hours. Students also tended to use the drug to enable them to deal with the gruelling academic competition. Growing wealth provided a financial capacity to purchase and experiment with a range of drugs. Urbanisation and modernisation

contributed to the breakdown of the traditional family structure and the rise of mass entertainment, including nightclubs and dance parties, spawned a strong 'drug culture'. Finally, the advent of mass media and the Internet contributed substantially to the spread of this new culture.

While these factors contributed to an overall rise in ATS use, specific developments in Burma and Thailand also meant that Burma was to emerge as a major supplier.

The Golden Triangle based drug lord, Khun Sa, 'surrendered' to the Burmese authorities in 1996 under increased pressure from the US DEA and other agencies. With Khun Sa's surrender, his Mong Tai Army rapidly reduced its production of heroin.

The decline of Khun Sa presented an opportunity for the United Wa State Army (UWSA) to increase production, which in turn entailed a shift in the production area from the MTA area adjacent to the Thai border, further north to an area adjacent to the border with China.

In addition, in the mid-1990s, due to a continuing crackdown in Thailand on heroin trafficking, the trafficking of heroin from Burma to major destinations shifted from Thailand to China. (see Diagram 3). Since then there has been ample supporting evidence of an upsurge in trafficking through China around this time. This includes a rapid increase in the number of heroin addicts in Yunnan Province in China during the 1990s.

At the same time, the Thais also cracked down on the methamphetamine production laboratories in Thailand, providing an opportunity for producers in Burma, such as the now strengthened UWSA, to gain ready access to a growing Thai market. (See Diagram 4.)

Production of amphetamines in Burma was also facilitated by another development, this time in China. With the advent of economic liberalisation in China, many of the inefficient state run chemical plants lost their captive markets and could not find new ones. This provided an incentive to 'turn a blind eye' to chemical precursor diversion.

It is noteworthy that the very routes now used to take heroin out of Burma could also be used in reverse to bring precursors back in. There was thus a natural symbiosis between the production of heroin and methamphetamine opened up by the shifting of the trafficking routes from Thailand to China.

Other economic factors relating to profitability and risk also stimulated the criminal groups to

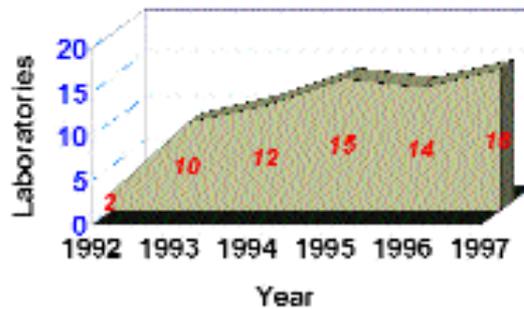


Diagram 4: Methamphetamine laboratories uncovered from 1992-97.

diversify into the production on methamphetamine. To understand these it is important first to consider the differences in the manufacturing process for each of the products. The most significant of these differences is that the precursor for heroin – opium – is an agricultural product. (see Diagram 5.) Methamphetamine production, on the other hand, requires ephedrine, which can be obtained either from the Ephedra bush, which grows naturally in northwest China, or can be synthesised. The synthesised product – pseudo-ephedrine – is more commonly used. Significantly, pseudo-ephedrine is not subject to the vagaries experienced in agricultural production.

Because heroin is derived from a cultivated crop there is inherent risk in its production. Opium cultivation is visible from aircraft or satellite, is susceptible to drought, floods and frost, and it is reliant upon skilled labour for cultivation. On the other hand, methamphetamine production facilities are more mobile and production is not subject to opium eradication campaigns such as the one

Production and risk

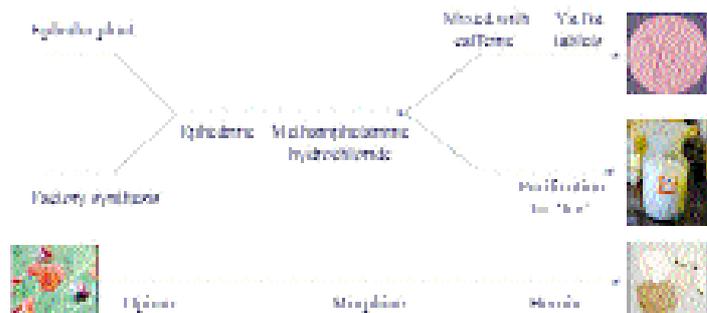


Diagram 5: Manufacturing processes for amphetamine type stimulants and heroin.

Afghanistan vs Golden Triangle production
As a proportion of potential world yield (UNDCP data)

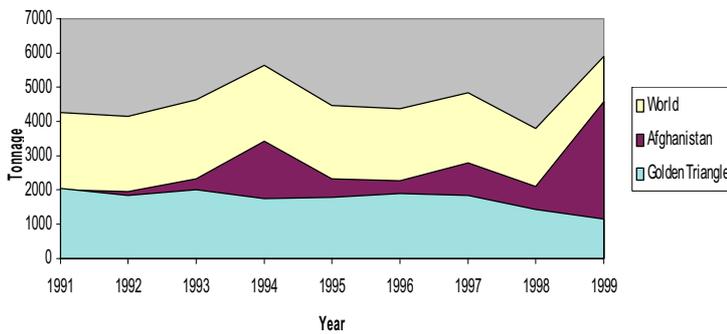


Diagram 6: Comparison of opium production in the Golden Triangle (blue) with production in Afghanistan (maroon) and the World (yellow).

currently being sponsored by the UNDCP.

These differing factors were significant in spurring on the production of ATS by the Wa in Burma, but they were not the only factors. ATS also proved exceptionally profitable, due in part to the rapidly developing ATS market in Thailand and to the low production costs relative to wholesale price. While heroin may be a more valuable product per kilogram at both retail and wholesale levels, from the producers' point of view, the mark-up can be considerably greater for methamphetamine. In fact, in the context of exports from Burma to Thailand, at the laboratory door the mark-up for methamphetamine is greater by a factor of nearly nine. At each successive stage, it is still greater but not by so much. These differentials are set out in Table 1, which compares the mark-ups for methamphetamine tablets and heroin manufactured in the Golden Triangle and exported through Thailand. These data are

Transition	Methamphet Tablets Mark-up %	Heroin Mark-up %
Conversion of raw materials at production site	1900	214 (assumes 14% yield from opium)
Thai/Burma border area to Thai/Lao border	18	Heroin cheaper at Thai/Lao border than at Thai Burma border.
Thai/Burma border area to northern Thai regions	54	30
Thai/Burma border area to Bangkok region	99	36
Thai/Burma border area to central Thailand	152	Not available
Thai/Burma border area to southern region	266	71

Table 1: a comparison of the mark-ups for methamphetamine tablets and heroin manufactured in the Golden Triangle and exported through Thailand.

calculated from Thai price data. Open source data produced by US authorities are somewhat different, but do not suggest different conclusions in respect of the profitability between the two substances from the manufacturers' point of view.

Although ATS may have been substituted for heroin production to some extent, these risk and profitability factors did not result in a complete substitution of one drug over the other. Rather, a new market for methamphetamine was developed alongside the existing heroin market. Indeed, in some cases, heroin and ATS continue to be produced in factories located at the same site.

Also, although there was a relative decline in heroin production in Burma in the latter years of the 1990s, it can in part be explained by three years of drought followed by abnormal flooding and frost rather than by any decision to produce ATS instead.

Furthermore, even though methamphetamine proved highly profitable because of Thai consumption, Burmese methamphetamine does not command the same price in markets outside Thailand. For example, in Kunming, China, it is only US\$1200 per kilogram compared to US\$5800 in northern Thailand.

This explains the fact that, according to Thai authorities, most of the methamphetamine produced in Burma – about 600-800 million tablets on their reckoning – flows into Thailand.

Meanwhile, with a comparatively strong heroin market elsewhere, the producers in Burma also had an incentive to continue the production of heroin. Indeed, in the region predominantly now supplied by the Golden Triangle – East and South East Asia, Australia and Canada – opium and heroin addiction grew. According to official Chinese data, opium and heroin addiction in China rose by 870 per cent in the period from 1990-99. Addiction also rose markedly in Australia between 1995 and 1998, rising from 0.4 per cent to 0.7 per cent of the population aged 14 years and over for recent use.

In order further to appreciate the complexity of comparative global drug markets, we also need to examine the production of heroin in Afghanistan in relation to Burma.

Diagram 6 compares opium production in the Golden Triangle (blue) with production in Afghanistan (maroon) and the World (yellow).

At first glance it appears that rising production in Afghanistan was competing with and displacing production in Burma and that this may have resulted in Burmese producers turning to methamphetamines. However, the timing of the displacement effect in relation to the two principal markets previously supplied by Burma is not

commensurate with the view that Burmese heroin producers turned to ATS because they had been supplanted by Afghanistan. The European market was taken over by Afghanistan as early as 1990 and the US market was filled by Colombian heroin about that time also.

Note also that although world prices for heroin have been low in recent years, much of the price cuts appear to have been borne by street and middle level traffickers. Indeed, during the drought in Burma, opium farm gate prices actually doubled.

Trafficking routes

The traditional trafficking route for both heroin and amphetamines was across the Burma-Thai border adjacent to the Thai provinces of Chiang Mai and Chiang Rai. (See Map 1)

As discussed above, when this route came under pressure a new route emerged into Yunnan, China, and thence to the southern Chinese ports.

A sub-route to this route emerged involving trafficking drugs into Yunnan, thence south, using the better infrastructure in Yunnan, into Laos and back into Thailand, or on through Vietnam to the West and other destinations.

In recent years, there has also been a growing propensity for drugs to be trafficked through the Andaman Sea. Australia's largest heroin seizure to date – nearly 400 kg – came through this route. Maps 2 and 3 relate to a seizure earlier this year involving a trans-shipment of 100 kg of heroin and several million *ya-ba* pills from Moulmein in Burma to a fishing vessel in the Andaman Sea. The heroin was bound to the West (possible Australia) via Singapore, while the *ya-ba* was destined for Thailand through the port of Ranong. The case illustrates both the emergence of the southern trafficking route out of Burma and of poly-drug trafficking.

Finally, the traditional route through the Karen regions into North East India is again under pressure, both from *ya-ba* and heroin. In reverse, precursors such as pseudo-ephedrine and acetic anhydride come in to Burma from India, just as they do along the trafficking routes into China.

Emerging trends

Recent drug trends in Asia include the spread of Burmese produced methamphetamines beyond Thailand, the spread of ecstasy and the beginnings of ecstasy production in Asia, and a growing trend towards poly-drug trafficking.

'WY' brand methamphetamine is the brand most commonly produced by the Wa ethnic group in North East Burma. Although 'WY' brand was initially produced predominantly for the Thai market, as described above, it has recently



Map 1: Trafficking routes out of Burma for illicit drugs.

appeared in the markets in Laos, Vietnam, China and increasingly Burma itself. Some has reportedly turned up on the West Coast of the US and in Switzerland. Recently, a large amount of ATS market with a 'WY' was seized in Australia under *Operation Wahoo*.

Another trend is the growing use of 'ecstasy' in Asia and the development of incipient production capacity. In Australia, ecstasy now constitutes 25 per cent of all seizures at or near the border by weight and 10 per cent by number. Nearly all of this is still sourced from Europe rather than Asia. However, there is an increasing trend for European-sourced ecstasy to be trafficked to



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Australia by Asian criminals, who tranship it through South East Asian transport nodes.

Although European ecstasy is popular in some of the more wealthy Asian countries, especially Malaysia, Hong Kong and Singapore, it is generally too expensive for most Asian markets. But should quality ecstasy be ever be produced in Asia, however, the drug would become cheaper and probably much more widely used throughout the region. Globally, Asia could become a production centre for ecstasy.

Given the background described above, it makes sound economic sense for the Wa and other producers and traffickers to combine consignments of different drugs in the same shipment. We have already referred to the joint shipment seized by Thai authorities in the Andaman Sea. In Australia, *Operation Pataka* involved 15kg of heroin and 125kg of MDMA (source unknown, but possibly pressed in China). And the Hong Kong based syndicates regularly deal in methamphetamines and heroin, even offering one drug when the other for some reason cannot be obtained. Of particular interest, we are now seeing higher levels of trafficking of cocaine by Asian criminals, including into Australia. These developments are all part of a global phenomenon of convergence of criminal networks and, concomitant to this, poly-drug trafficking.

Implications of increasing ATS use

As further research is conducted on the impact of ATS, evidence is emerging of the growing levels of harm to individuals and society associated with their use.

The work of Ricault at Johns Hopkins

University in the US suggests long-term use causes brain damage. Also, recent research in Germany suggests performance may be impaired by even short-term use.

Ice is an especially harmful drug, being typically 80 per cent pure and associated with long lasting highs but considerable psychosis and morbidity. Injecting *ice* can also cause the range of harms normally associated with intravenous drug use.

There is also a high level of social cost associated with use of ATS, including criminality, violent behaviour, family breakdown and corruption in law enforcement due to the large amounts of money involved.

Not only is there convergence in the trafficking of different drug types throughout the South East Asia, but also convergence of crime types. For example, drug smugglers are now involved in people smuggling, credit card fraud, counterfeiting and prostitution. A good example of this phenomenon is provided by *Operation Logrunner*, resulting in the seizure of 357kg of heroin in Fiji. That syndicate was allegedly involved in credit card fraud, people smuggling and counterfeiting.

Conclusion

Global drug markets are now closely interconnected, both in terms of markets for the same drug type and markets between drug types. This set of interconnections makes for a highly complex global picture.

In the foregoing account, we have attempted to illustrate some of this complexity, mainly in terms of the relationship between heroin and ATS production in South East Asia, but also in terms of other drug and crime types.

It is important that we understand these complex developments because of the light they can shed on future problems and pressure points in the drug market. For example, if it is true that amphetamine production in Burma has not directly and fully displaced heroin production for the reasons outlined above, then it is probable that should climatic conditions return to normal, heroin production in Burma may again increase. This will have flow-on implications for the global market, possibly going some way to filling any shortfall arising out of the situation in Afghanistan resulting from the drought in that country and the decree by the Taliban against opium growing. Although indications are that the 2000-01 harvest in Burma is a poor one, it is only a matter of time before conditions return to normal.

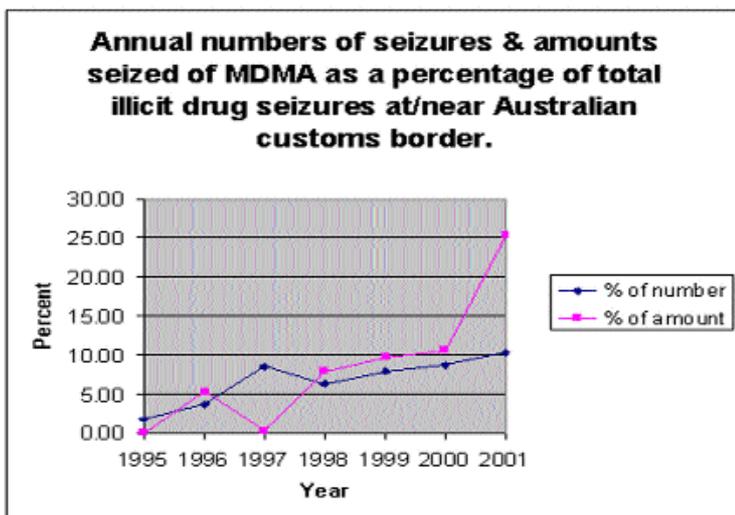


Diagram 7: Details of seizures at or near the Australian customs border.