Ethnographies of youth drug use in Asia

The growing phenomenon of youth drug use is of great concern to health authorities and policy-makers in Asia. The United Nations Office on Drugs and Crime (2010, 2012) warns of growing amphetamine use in Southeast Asia in the form of pills, powders and crystal meth, with over 400 illegal amphetamine-producing facilities seized in 2011 alone. The Thai government declared its War on Drugs in 2003, committing all drug users to treatment and involving local communities in the monitoring of drug use. China’s central government launched yet another People’s War on Drugs in 2005, including stiffer penalties for the use of synthetic drugs. The Association of Southeast Asian Nations’ 2012 declaration of a “Drugs Free Asia” by 2015 has only further encouraged national governments to crack down. Human rights activists have raised concerns about living conditions in some 1000 drug detention centres in Asia, home to around 235,000 — often young — drug users (Amon, Baral, Beyrer, & Kass, 2012; Amon, Pearhouse, Cohen, & Schleifer, 2014).

Instead of focusing on a handful of “problem drugs”, this special issue examines what youth want to achieve by using drugs and how they use drugs to achieve their desired mental and bodily states. It covers the use of a broad range of substances – synthetic drugs, opioids, alcohol, inhalants, and pharmaceuticals – among youth in seven Asian countries: Japan, China, Taiwan, Thailand, the Philippines, Indonesia, and India. Socio-economically, they range from street children in Delhi to students in Chiang Mai to businessmen in Shanghai. Our premise is that if we want to minimize the harms of drug use, we need to first understand both how and why young people turn to drugs – their concrete practices of drug use and the aims they wish to attain.

We conceptualize “youth” in dynamic rather than in legal or demographic terms. Youth are in the process of becoming less dependent on their parents, seeking partners, careers and families of their own. They are often on the move – from school to work, from rural to urban settings – and must face the challenges posed by these transitions. At the same time, youth are the makers and consumers of culture (e.g. Benet & Kahn-Harris, 2004; Featherstone, 1991). Especially in urban settings, they encounter a sea of media images that encourage the work of “imagination” (Appadurai, 1996), while sharpening the sense of exclusion and marginality for those who cannot afford the desired goods and lifestyles (Cole & Durham, 2007). The ethnographies collected here highlight the social relations that constitute the daily lives of youth as well as the living conditions and lifestyles in which drugs often come to play key roles.

From epidemiology to ethnography

In their contributions to our understanding of youth drug use, public health researchers and behavioural psychologists have focused on the epidemiology of “problem drugs” and their associated risk factors. Quantitative analyses based on large survey data have associated factors such as low economic status, educational level, and peer pressure to illicit drug use (e.g. Assanangkornchai, Pattanasattayawond, Samangsri, & Mukthong, 2007; Hibell et al., 2009; Kokkevi, Richardson, Florescu, Kuzman, & Stergar, 2007). Numerous sociologists and anthropologists have criticized such research strategies, arguing that they fail to uncover the social structures that perpetuate drug use (see Pilkington, 2007b). Drug use, they often argue, is a means of survival in settings characterized by poverty, lack of education, unemployment and violence (e.g. Bourgois, 1998; Nasir & Rosenthal, 2009; Singer, 2006).

In recent years, social scientists have turned to qualitative research methods that privilege emic points of view and the agency of young drug users. They have generated more interpretative understandings of how youth “feel about their drug use” (Foster & Spencer, 2013: 22); the pleasures that taking drugs entail (Duff, 2008; Hunt, Evans, & Kares, 2007; Martinic & Measham, 2008; Moore & Miles, 2004); how drug use informs youth identity and social relations (Fletcher, Bonnel, Sorhaindo, & Rhodes, 2009; Kelly, 2006; Niland, Lyons, Goodwin, & Hutton, 2013; Riley & Blackman, 2008; Romo, Marcos, Rodriguez, Cabrera, & Hernán, 2009; ter Bogt, Engels, Hibbel, Van Wel, & Verhagen, 2002); and the role of social spaces in constructing experiences of drug use (Duff, 2011; Keane, 2011). Such studies have shown, for example, how weekend raves allow young people to escape from expectations and pressures in their everyday lives (Moore & Miles, 2004; Riley, Griffin, & Morey, 2010). Many of these studies have relied on semi-structured interviews and focus group discussions, involving relatively small numbers of interviewees.

Ethnographic explorations of youth drug use involving a broader range of methods – participant observation, virtual and sensory ethnography, the long-term following of interlocutors as well as group discussions and interviews – have added fine-grained texture to our understanding of youth’s lived experiences with drugs, both individually and collectively, and as they change over time (Dennis, 2005; Fast, Small, Krusi, Wood, & Kerr, 2010; Gigengack 2014; Green & Moore, 2009; Moore, 2004; Pilkington, 2007a; Race, 2009). The multiple, fluid functions and meanings of drug use can only be known when researchers take the time
to get to know their interlocutors and participate in their everyday lives. It is this limited body of ethnographic literature on youth drug use that this special issue aims to contribute to.

Ethnographers generally use a variety of methods tailored to fit the local situation and the everyday lives and beliefs of their research subjects. Through immersion in their field sites, they learn of the relevant others and the local opportunities and constraints that shape drug use. Over the course of research, they are often alerted to new potential informants and sites for participant observation. Roy Gigengack in this issue rode an auto-rickshaw through the streets of Delhi displaying bottles of typewriter correction fluid to gauge the responses of street children. Sometimes the bottles made no impression at all; at other times eyes light up at the sight of the hallucinogenic inhalants. Hardon and Ihsan experiment with a new method they dub the “head-to-toe” interview, asking sex workers in Makassar which chemicals they apply to their hair, eyes, ears and noses down to their toe nails. It proves successful in countering squeamishness over body parts and returns some unexpected findings. Ethnographic practice also entails investing in relationships and building rapport with interlocutors over time, many of whom may otherwise be reluctant to share experiences with strangers (whom they may suspect are police). Over a nine-month period, Anjalee Cohen in this issue frequented a drop-in centre for (former) drug addicts in Chiang Mai, establishing relationships with members and staff with whom she “regularly drank at bars, danced at nightclubs, attended birthday parties, sang karaoke, played internet games, shopped and ate out. . . . The trust I gained from informants was shown in their willingness to divulge information that was both highly personal and, for the most part, illegal.” More generally, “hanging around” with one’s informants allows them to share their stories when, where and how they want, as well as to co-shape the research agenda (Pigg, 2013).

The authors in this special issue employ ethnographic methods to map the chemical lives of youth in great detail. Why do youth turn to drugs? What effects are they seeking? What role do drugs play in calming their fears, in achieving their dreams and aspirations, in shaping their bodies? Which drugs do they use on a daily basis? Where and in what social contexts? Which drugs or combinations of drugs do youth experiment with? What desired or adverse effects do they experience? What (if any) social transformations ensue through their use? How are the drugs administered? Are they mixed with other substances? Where do youth get information on (new) drugs, and on their (adverse) effects? How is chemical use related to their working lives?

The result is a series of ethnographic case studies that reveal how youth inhabiting very different social worlds face challenges, manage risks, and strive to feel happy, beautiful, alert, confident, sophisticated and much else by using drugs. The case studies show how drug-use practices are embedded in and conditioned by ever-changing youth cultures, local drug markets, healthcare institutions and policies, and state and police interventions that constrain availability and use in various ways. Collectively, they point to the importance of the social relations surrounding drug use, including how the ‘lived effects’ of drugs are generated, how knowledge of specific drugs travels through youth networks, and how drug use is mediated by social media and the internet.

Sanabria (2009) has criticized the tendency of anthropologists to foreground the socially constructed effects of drug-taking with scant attention to what drugs physically do in and to human bodies. Our approach is an explicitly bio-social one: drugs have effects due to their pharmacological properties, not only because they signify and represent particular meanings (cf. Valentine, 2011). At the same time, we argue that the ‘lived effects’ of drugs are not solely due to their chemical properties, but are generated in social settings through specific techniques (Demant, 2009; Gomart & Hennion, 1999; Gomart, 2002). That is, the lived effects of drug use are both socially constructed and physically produced through specific practices (cf. Race, 2009).

The case studies collected here provide detailed ethnographic accounts of how youth experiment with different (combinations of) drugs and administration routes to generate and tailor their desired effects. They describe how young people alert each other to new ways of attaining their desired mental and bodily states, and how they jointly assess the effects and side-effects of different drugs on each other’s bodies and minds.

While youth drug use has most commonly been studied in societies where it is tolerated by the local authorities, many of the sites featured in this issue are affected by the tendency, found across much of Asia, to criminalize drug use (cf. Reid & Crofts, 2013). Norms, regulations and enforcement vary considerably between countries and social classes. Self-medication is the norm in many societies where potent (ostensibly prescription) pharmaceuticals are available over pharmacy counters, intersecting with the use of illicit drugs. Other practices of substance use are officially condoned and socially encouraged. Yet others fall below the radar of policy-makers, healthcare professionals and social concern.

The contributions

Giulia Zoccatelli, in the first contribution, asks how and why heroin exploded onto the social landscape of south-western China in the 1980s, following its almost complete absence under Mao. Her answer is based on both secondary sources and data collected during 13 months of field research among a local community of (ex) heroin users in a town in Yunnan province near the Sino-Vietnamese border. Drawing on the life histories of 20 of her informants, Zoccatelli reconstructs the spread of heroin among Yunnan’s youth in the 1980s – an aggregate outcome, she argues, of the opening of new routes for the global traffic of opiates passing through Yunnan province, an almost complete lack of awareness about drugs in the immediate post-Mao period, the rise of the market economy which freed youth migrating to cities from family control, and a new youth culture that prized entertainment. Urban youth had money to spend; heroin was new, fun and readily available, and they began using it unaware of its addictive potential. In a paean to Philippe Bourgois (2002) call for “critical social theory. . . to be brought back into public health research”, Zoccatelli further argues that we need to study the macro-social contexts of drug use to deconstruct the “psychologically reductionist assumption that drug use is a context-free matter of individual choice and behaviour.”

Whereas heroin with over one million reported users still remains the most widely used illicit drug in China (UNODC, 2012), the era of synthetic drugs has clearly arrived. Synthetic or “party drugs” are seen as fashionable “foreign entertainment products” in contemporary urban China’s bars, nightclubs, karaoke lounges and entertainment venues, and since the government’s crackdown, increasingly in private apartments. Linshao Zhen and Yong-an Zhang in their article examine the experiences of China’s young urbanites with synthetic drugs and their discourses of risk. Their findings are based on extended interviews with 28 youths and young adults interned as ‘drug addicts’ in a government-run ‘compulsory isolation detoxification’ centre in Shanghai. In their interviews, Zhen and Zhang ask about personal experiences of drug use and strategies to manage risks; they are primarily interested in whether their informants are indeed ‘addicts’ or remain in control of their drug-taking. The interned drug users emphasize the many emotional, social and psychological benefits of “skating
ice” (sniffing methamphetamine) and taking ecstasy, ketamine and other synthetic drugs, as well as their careful strategies to minimize harm. “They viewed the use of synthetic drugs as rational recreation under the perceived boundaries of acceptable risks.” For many of Zhen and Zhang’s informants, drug taking was a means to achieve socially acceptable goals; businessmen, for example, used synthetic drugs to cultivate connections. The authors conclude: “Standards for addiction need to distinguish between different types of drugs and reflect medical standards for healing the sick, not legal standards for punishing offenders.”

Moving from coastal China to northern Thailand, Anjalee Cohen in her contribution examines the attraction of methamphetamine pills – ya ba, the “crazy drug” – among students in urban Chiang Mai. Cohen’s findings are based on long-term immersion in the field. Her informants report positive experiences with ya ba: it makes them alert, energetic, and confident. It fosters pleasure, socializing, and a sense of well-being. It enhances performance in activities ranging from studying and sex to dancing, sport and games, even making routine activities like house-cleaning more bearable, even fun. Individual motivations and pharmacological responses, however, are only part of the story. Cohen argues that wider social and cultural contexts are crucial for understanding the appeal of the crazy drug: “In their overwhelming aspiration to be modern, young Thai are consuming ya ba not to rebel against the dominant culture, but to keep up with the demands and expectations of a modern capitalist society.” That the pills are products of modern technology contributes to the perception that they are safe, mirroring a broader faith in modern (western) medicine. The disconnect with government and media discourse is once again striking. Cohen notes that the “horse drug” was legally available in Thai pharmacies when it was used by manual labourers to work longer hours; it was only in the 1990s when the use of methamphetamine pills reached “epidemic” proportions among students that the government rechristened it the “crazy drug”, which soon became associated with an “uncontrollable and hedonistic youth culture”.

Cohen’s informants were generally well-off students supported by their parents. The following article by Gideon Lasco also examines the use of methamphetamine (in its crystalline form, known locally as shabu). Lasco’s informants, however, are drawn from an underclass of precariously employed young men in a Philippine port city, working as tambays (stand-bys) doing odd jobs at the port. Through interviews, first-hand observation and hanging out with his informants, Lasco gradually learns that their work as street vendors also involves providing sexual services, petty theft, and occasionally, involvement in risky “car-napping operations”. Shabu plays a crucial role in their daily lives on the street, providing strength, confidence, and disinhibition. “We are not educated and we have nothing. Where will we get the confidence to talk to others, if not from shabu?” To facilitate irregular working hours, methamphetamine is used to stay awake, cannabis and alcohol to fall asleep. Lasco notes that his informants are well aware of the legal, economic, and physiological risks of their drug use. They nevertheless perceive that the benefits outweigh the costs. Lasco concludes: “If drug use is a response to an economic problem, policy-makers need to consider an economic solution.”

The preceding contributions focused on the use of illicit drugs. Those that follow examine the use of pharmaceuticals, cosmetics, alcohol, and household products that generally escape the attention of the law. In the following contribution, Anita Hardon and Amelia Damayanti Ihsan examine the “off-label” (for purposes other than what it was originally intended) use of the psychoactive painkiller Somadril. Their informants are twenty “freelance” sex workers and bar hostesses in the city of Makassar and its environs in eastern Indonesia. Hardon and Ihsan first trace the history of Somadril’s active component, carisoprodol. Developed in the United States where it was soon used recreationally, in Makassar knowledge of the painkiller’s psychoactive properties spreads from health professionals and then through youth networks by word of mouth. What is less evident is the flow of information on carisoprodol’s harmful effects (it can lead to dependence and is duly regulated in the United States and the European Union). The male and female sex workers in Makassar, however, consume Somadril in large quantities to feel happy, sexy and confident. Readily available without prescriptions from “naughty pharmacies” and street dealers, they experiment to find how best to consume the pills, mixing them with soft drinks, alcohol, hot foods and cough medicine to enhance the effects. While Somadril helps the sex workers feel confident enough to approach prospective clients, it is unclear whether they take Somadril to work, or work to take Somadril. The lion’s share of their income goes to feeding their habit.

The following contribution remains in Indonesia and again concerns the use of off-label pharmaceuticals as well as unsafe cosmetics. Nurul Ilmi Idrus and Takeo David Hyman examine the practices of self-administered, chemically-assisted bodily transformation among thirty members of Indonesia’s waria (male-to-female transvestite/transgender) community. Waria are a third gender in Indonesia. The first author’s informants in Yogyakarta, Makassar and Bulukumba do not want to become women. They do, however, aspire to approximate prevailing standards of Indonesian feminine beauty and see their bodies as projects in the making. To grow beautiful breasts and reduce muscle mass, they use contraceptive pills and injections available at local pharmacies, often in large quantities. To have lighter, softer skin, they turn to a plethora of creams, powders, and exfoliants widely marketed in Indonesia (and beyond). They experiment to find the combination of products, dosages, and administration routes that are the most compatible with their individual bodies, competing with each other to see who can attain the best results. While most are fairly happy with the immediate results, they experience severe side-effects. These are often accepted, especially if they do not affect outward appearance. Alarmingly, physical pain – “It feels like a knife cutting my face and I usually stand in front of the fan” – is often interpreted as a sign of product efficacy. The safety issues concern the long-term side-effects of hormones in high dosages and unsafe skin-whitening products, including those containing hydroquinone.

Bodywork among non-gender-normative individuals remains the subject of the next contribution. This time the setting is a provincial city in central Thailand. Panopat Poompruek, Pim-pawun Boonmongkon and Thomas Guadamuz describe how kathoës (male-to-female transgenders) inject a veritable cocktail of “beauty drugs” – including glutathione, vitamin C, collagen, and placenta-based preparations – into their veins so that their skin becomes white, fair, soft, glowing, smooth, firm, well hydrated, with an aura and a healthy flushed look, free of wrinkles, blemishes, freckles and spots. This takes place during weekly “injection parties” held in the secret upstairs room of a wedding studio run by kathoës, also the focal point of transgender socializing in the town. The infusions of beauty are administered by a local public health nurse (in her private capacity), giving credence to the perception that injections are a modern and effective means to deliver rapid results. Although these injection parties are light-hearted opportunities for kathoës to socialize, they reproduce prevailing ideologies of gender, beauty and sexuality: “If you’re a kathoei, don’t stop being beautiful.” Physical beauty, the authors argue, is social and symbolic capital; it translates into esteem by kathoëi peers and better prospects for romance and employment. But it also means that kathoës must use beauty drugs more frequently, more continuously, and in higher doses. The conclusion is bleak: mainstream Thai society must accept kathoës beyond their stereotypical roles.
if they are to build a sense of self based on qualities other than being beautiful.

The following contribution takes us to the drinking establishments of downtown Tokyo, where Paul Christensen examines how consumption and connoisseurship of a diverse array of international and Japanese alcoholic beverages has emerged as a form of cultivated cultural capital among young urbanites. While the overall consumption of alcohol is declining in Japan, this is not the case among its young adults, who are now drinking in greater volume and frequency. Being drunk is widely tolerated in Japan; it is expected in certain social situations. Health concerns related to alcohol thus struggle for recognition against largely uncritical views of intoxication. Christensen’s findings are based on long-term fieldwork including participant observation, both on the online forum for discussing alcohol “I ♥ Sake” (with over 60,000 variously active members) and offline with “I ♥ Sake” members in the bars of Tokyo. Connoisseurship of alcohol, Christensen argues, is a way for young adults to present themselves as sophisticated and cosmopolitan despite their difficulties in attaining more conventional forms of status in Japan’s stricken economy. They do not see their own behaviour as the “frivolous pursuits of youth… group members see little reason to invest in education, marriage, or employment—official institutions they increasingly regard as irrelevant or dysfunctional. For them, expert knowledge and cultivated connoisseurship becomes means to shape a meaningful existence amid the wealth and precarious structuring the paradox of contemporary Japan.”

The following contribution by Roy Gigengack takes us to Delhi and the use of inhalants among street-oriented youth. Despite its visibility on the streets, inhalant use remains poorly understood. The number of inhalant users in India is a matter of educated guesswork although by all accounts it is a growing phenomenon. Despite the obvious harm to health, inhalant use among the “lowest class” is surrounded by lack of awareness and indifference—by policy-makers, healthcare professionals and the general public alike. Gigengack pursued fieldwork among six different groups of youth—children from street families, children ‘of the street’, rag pickers, part-time street children, inhalant-using school children, and slum youths—in four areas of Delhi for one year, working in a team with an Indian social worker and sociologist. He found youth using glue in one location and a toluene-containing typewriter correction fluid (Eraz-Ex diluter and whitener, manufactured by Kores) in all of his field sites. Gigengack’s informants experienced stigmatization, violence and bodily deterioration on account of their sniffing. Nevertheless, the pleasure of intoxication is beautiful, and for many, overpowering. The feelings of euphoria, while instant, don’t last long and give way to cravings. “Distinguishing between hedonic and side effects”, Gigengack argues, “addiction helps to understand inhalant use as at once neurobiological, cultural, and involving agency. The implications are that India needs to develop a policy of treatment and employment to deal with the addiction.”

In the final commentary, Liang-Yin Hsu examines attempts by legislators in Taiwan to turn the use of ketamine into a serious criminal offence. Ketamine use is growing in Taiwan, especially among youth. Compared to other drugs, it is cheap and readily available in clubs, bars and on school campuses. Following sensational media coverage linking ketamine use to crime, violence, and threats to public order, proposals centred on reclassifying ketamine from Class III (without criminal penalties) to Class II (up to three years in jail) under the Drug Prevention and Control Act. These attempts have been rebuffed by the advisory council responsible for drug policy; the trend in Taiwan is to treat drug users as patients rather than criminals. Hsu analyses the rhetoric of key conservative Kuomintang but also Democratic Progressive Party legislators who backed the proposals to reclassify ketamine: “Campaigns to eradicate deviant behaviour, depicted as threatening social order and jeopardizing academic achievement, are more likely to gain the support of parents and other authority figures” while “school-aged youth are an easy target since they do not enjoy voting rights and cannot protest at the ballot box.” Hsu concludes: “the power of moral panics should not be underestimated and may be a useful framework for examining drug policy in other contexts.” The object of drug policy need not be the health of drug users. It need not be about drug users at all, but about the political careers of moral entrepreneurs.

**Postscript on harm reduction**

Drug harm, Rhodes (2002, 2009) argues, is shaped by the “risk environment” comprised of physical, social, economic and policy factors. This approach to understanding and reducing drug-related harm gives primacy to context—an alternative to strategies that focus on individual-level behavioural change which, as Moore and Fraser (2006) point out, often fail to apprehend the complexity of risk.

We believe some of the findings in this special issue have the potential to contribute to safer environments for youth. Collectively, they point to a broad range of practices that put youth at risk of drug-related harm; the many purposes for which young people use drugs; how they experience adverse side-effects; and the strategies they use to avoid or lessen drug-related harm.

Our first point concerns many harm reduction strategies’ limited focus on illegal narcotics. The studies collected here point to a much broader range of “drugs” that can harm their users: pharmaceuticals ranging from painkillers to hormones, cosmetics including creams and carcinogenic skin-whitening products, and household items such as glues and solvents, often used “off-label” for purposes other than what they were originally intended. Their potential for harm lies in their chemical content, the drug quality, the dosage, the frequency of use, and how they are administered. Pharmaceuticals in many societies are readily prescribed or available over the counter without prescription and aggressively advertised without appropriate warnings about risks (cf. Quintero and Nichter, 2011). While punitive drug policies push illicit drug use underground, they can also lead the users of legal drugs to believe that their practices are safe. Harm reduction programs need to address a broader range of threats to health by both legal and illegal substances.

Second, the studies point to the many purposes for which young people turn to drugs: to feel happy, beautiful, confident, strong, alert, energetic, eloquent, modern, sophisticated and cosmopolitan. Youth also use drugs to bond with friends, transform their bodies, lose weight, stay warm, alleviate hunger, fall sleep, and to escape and forget. These purposes are often infused with social and cultural meaning. Often they help young people gain status among peers. Sometimes they have an overtly economic logic, increasing their capacity to earn in the informal economy. At other times drug use just helps them get by. Many of the contributions in this issue suggest that youth are making rational decisions when they use drugs, deciding that their perceived benefits outweigh the risks.

Numerous scholars have pointed to the need for harm reduction programs to acknowledge the role of pleasure in drug use (Duff, 2008; O’Malley and Valverde, 2004; Race, 2008, 2009). Young people using party drugs such as ecstasy, cocaine and amphetamines often experience an otherness that is “profoundly exciting and pleasurable”, a “deeper connection to the spaces one moves through and the people one encounters in these spaces” (Duff, 2008: 391). The challenge, Duff argues, is to better understand how
experiences of pleasure mediate risk. The same can be said about many of the other mental and bodily states that drug use can bring about.

Third, the studies shed light on the broad range of adverse side-effects that youths experience as a result of drug use: dizziness and nausea from swallowing large quantities of psycho-active painkillers and cough medicines; chest pain, loss of libido, weight gain and pimples from ingesting hormones; burning sensations from injecting glutathione and vitamin C into their veins; coughing, headaches, gassy eyes and impaired movement from sniffing solvents. Some adverse effects are sufficient reason to discontinue use and to find substitutes. Others are tolerated because they don’t affect outward appearance. Alarming, pain is often seen as a sign of drug efficacy.

Finally, young people are extremely creative in finding strategies to avoid or lessen drug-related harm. Drug taking among youth is almost invariably a social activity. They experiment in groups and are constantly comparing experiences with friends. Inhaling, snorting and injecting is seen as more risky than the oral consumption of pills (cf. McKetin & Li, 2013; McKetin et al., 2008). Observing their friends often makes young people acutely aware of the risks of overdose and addiction. Peer groups have norms for how, when and where to use drugs; limits exist, and going beyond them is frowned upon. As one of Lasco’s informants told him in the Philippines: “If you are getting carried away by the drug, if you’re working just to have it, then you’re an addict. But if you’re the one carrying the drug, if you’re taking it so you can be more productive, then you’re not an addict. You’re just using the drug.” Harm reduction programs can utilize such situated narratives of harm and patterns of tolerance when designing educational programs to increase the awareness of risks.

Acknowledgements

We are grateful to Martine de Rooij for managing the special issue and surviving with her humour intact. We thank Inge van Schipstal for contributing to the literature review and meticulously cross checking the references. The Chemical Youth project, of which this research is a part, is funded by the European Research Council (ERC-2012-AdG-323546).

References


Anita Hardon*  
Takeo David Hymans*  
University of Amsterdam, The Netherlands

* Corresponding authors. Tel.: +31 618090435.  
E-mail addresses: a.p.hardon@uva.nl (A. Hardon), davidhymans@hotmail.com (T.D. Hymans).