



HAL
open science

Unstable Pharmaceutical Values. The Grey Political Economy of Drug Circulation in Cambodia

Laurent Pordié

► **To cite this version:**

Laurent Pordié. Unstable Pharmaceutical Values. The Grey Political Economy of Drug Circulation in Cambodia. BioSocieties, In press. hal-03102783

HAL Id: hal-03102783

<https://hal.science/hal-03102783>

Submitted on 7 Jan 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Unstable Pharmaceutical Values.

The Grey Political Economy of Drug Circulation in Cambodia

Laurent Pordié

This paper uses the circulation of drugs as a port of entry to understanding the fabric of pharmaceutical values. As they circulate, pharmaceuticals encounter a plurality of worlds ranging from the global spheres of transnational transactions to situated localities and their specific realities. A nexus of manufacturers, regulators, importers, distributors, middlemen, sellers and consumers all share a convergent center of interest in drugs. All value pharmaceuticals. Just as their motivations, means and practices of valuing are diverse and sometimes opposed, the resulting pharmaceutical values are multiple, variable and contested. Cambodia is a case in point since the production of pharmaceutical values in this country is entangled in licit and illicit circulation and practices. Value-making brings to light matters of exchange and money, therapeutic efficacy and toxicity, prescription modalities and epistemology, location and esthetics, and ultimately corruption, risks and justice. This entanglement sets the ground for the definition and study of a grey political economy, which is qualified as interstitial, multivalent and sensitive to circumstances. Here, pharmaceutical values are produced through creative agency and arrangements, unexpected social combinations, material and pharmacological heterodoxies. This situation opens up a rich terrain for the exploration of the relation between drug circulation, modes of valuation and pharmaceutical values.

Keywords: pharmaceuticals, circulation, valuation, values, political economy, Cambodia

This paper addresses circulation and value. One starting point on the subject could posit that the value of things defines patterns of mobility. The networks in which a given object is embedded and the circuits and directions that it follows are all informed by the value ascribed to this object. Examples abound of the circulation of luxury products, spices, art pieces, or human organs. We learn that value heavily influences circulation. I would like to begin this paper by turning the problem upside down for the case of pharmaceuticals. I am interested in how the circulation of drugs affects their value. I am not trying to reinvent the Marxian transformation problem (Ira 1976) by comparing production in itself to the complex unity of production and circulation. Instead, I stress the fact that circulation is made of forms of social relationships, and practices of negotiation and exchange that make and transform value.

Each step in the drugs' trajectory has its own particular actors, relations and transactions, all of them characterized by different sets of ideas and regimes of values (Appadurai 1986). As they go through these varying contexts across space and time, the attributes of the drugs are modified. These attributes are connected to each other and include physical integrity, meaning, agency and efficacy, and they all coexist in relation to value. These characteristics invite us to build on the works looking at the social lives of drugs (Reynolds Whyte *et al.* 2002, van der Geest *et al.* 1996) by studying the social, economic and material dimensions of pharmaceuticals in order to examine the making of pharmaceutical values.

Value accretion is influenced by a number of phenomena that this paper proposes to examine: state logics, private undertakings and alternative strategies in the import and distribution of drugs, corruption and inventive ways of getting by, the appetites of

businessmen, ambitions of drug sellers and the needs of consumers. The dialectic relationship between pharmaceuticals and money is key here; they are both recurring objectives and justifications. But this situation is more than just a material economy; it also consists of relationships between individuals and society and between markets and the state. These relationships account for a certain kind of political economy of pharmaceuticals (Chaudhuri 2013, Hira 2009, Petryna 2009, Sunder Rajan 2006), understood in reference to politics or economic values that not only emerge at the level of states or regional governance but also within smaller social groups and social networks. Taken together, however, the phenomena listed above also shed light on the grey zones that form at the intersection and entanglement of licit and illicit circulation and practices. They constitute a grey political economy, which is not subject to a ready-to-use set of categories or rules. It is interstitial, multivalent and sensitive to circumstances. This kind of political economy opens up avenues for creative agency and arrangements, social innovation, material and epistemological/pharmacological heterodoxies. Entrepreneurs thrive or just survive on it; people get cured or may die from it. It is simultaneously highly adaptable to situations, rewarding or prohibitive, incredibly harsh or life-saving. This grey political economy is not marginal in Cambodia, it is pervasive, present at all levels of society.

In these grey areas, pharmaceuticals take center stage. Their paths encounter manufacturers, regulators, importers, distributors, smugglers, sellers and users, together with their warehouses, trucks, computers, shelves, and stomachs. This socio-material nexus constitutes the flexible architecture within which the values of drugs are produced, contested and transformed. Writing about values in the plural follows a wide-ranging collection of theoretical and empirical discussions in the social sciences that have shown that value impinges on many domains of social life, including culture, politics and morality (Appadurai 1986, Elyachar 2005, Eiss and Pedersen 2002, Graeber 2001, Henry *et al.* 2013, Kluckhohn 1966 [1958], Street 2016, West 2005), and cannot be reduced to a simple economic bargain. Sunder Rajan's *Pharmocracy* (2017), for instance, explicitly discusses the tensions between the value of health and market value. Perhaps due to the fact that pharmaceuticals are one of the most widespread and lucrative objects on Earth, however, specialized anthropological works have paid considerable attention to – and considerably complicated – the economy of drugs. Pharmaceutical value is produced through drug development, clinical trials or regimes of intellectual property and benefit sharing (Hayden 2003, 2007, Sunder Rajan 2006); it is forged by inducing patients to consume more drugs thus generating a surplus (Dumit 2012a, Sunder Rajan 2017); it involves investors evaluating profits and growth (Peterson 2016): it has shifted due to current emphasis on distribution and control rather than production (Quet 2016). In many of these cases, values may be plural but remain firmly anchored in a monetary reasoning. Money is key, as this paper will also show. Pharmaceutical values relate to the worth of drugs on the market in so many ways (economic value, exchange-value, price). But drugs are valuable in other senses as well: perception and use (use value, symbolic value), actual power to cure (therapeutic value), legal status (legal value). This paper will explore diverse forms of valuation (Birch 2016, Elyachar 2005, Graeber 2001), and the way they relate with one another in the production of pharmaceutical values.

In the pharmacies of Cambodia, a number of factors affect the values of pharmaceuticals, ranging from their indication, provenance, distributor and colour to their legal status, drug outlet location, transportation means and date of expiry. These factors intersect in practice to confer to a pharmaceutical its value – an inherently multiple, multifaceted and variable quality. This paper does not attempt to draw a grand analytic scheme of this diversity but rather to show the guiding social and material principles. A central observation concerns the relations, overlaps or oppositions between practices of

valuing (Heuts and Mol 2013) and pharmaceutical values themselves. For that purpose, I will examine three key themes: temperature (transport and storage of drugs), temptations (illicit ways of getting by) and repackaging (over-the-counter polytherapy). I will use a series of representative ethnographies to examine the instability of pharmaceutical values as drugs circulate towards and within Cambodia. This instability will also help to complicate our understanding of profits derived from pharmaceuticals. As they are being channeled through unofficial and illicit markets, profit is expanded and redistributed in creative ways to a host of new, non-official actors.

This article stems from a 17 month-long multi-sited anthropological fieldwork conducted in Cambodia between 2014 and 2019. In an attempt to write biographies of pharmaceuticals, I followed these objects physically from production to consumption. I have thus conducted ethnographies in pharma industries and UN offices, sat on the back of medical representatives' motorbikes, crossed borders with smugglers, lived with families of qualified and unqualified drug sellers, supplied fishermen villages with drugs, took coffee with agents from the Department of Food and Drugs, loaded public buses with pharmaceuticals, spoke to the customs at the airport, helped arranging drugs parcels with wholesalers in Phnom Penh, and much more. By following objects, I got to meet people. These encounters were in a way dictated by the trajectories of pharmaceuticals as they took me to various locations within the drugs' production and distribution networks. This approach inevitably took me to the capital of Phnom Penh – which is dubbed in this paper as the “urban” area – but also to the provinces bordering Thailand (Koh Kong, Banteay Meanchey) and Vietnam (Svay Rieng, Monduliri), as well as to the provinces of Prey Veng, Kompong Som, Kampot and Kampong Chhnang. However, so as to protect my interlocutors, both individuals and companies, no names and no exact research location will be given.

Temperature: transportation and storage in the making of values

Apart from half a dozen Cambodian industries that produce a handful of different generics, most drugs present in the country are imported.¹ For instance, antimalarial drugs paid for by the Global Fund and distributed by UN agencies come by air from Italy. Before the drugs enter the Cambodian market, a sample of each Italian shipment is sent to a certified laboratory in Nepal for quality testing. Drugs produced in France, partly made from raw materials imported from India or elsewhere, can follow sea or air routes, as do Korean or Chinese pharmaceuticals. Thai or Vietnamese health products follow land routes and may pass through wholesale drug markets located at the borders. The percentage of these latter products is expected to increase following the recent economic integration of the ASEAN. Currently, India is the largest provider of drugs to Cambodia (Bureau-Point *et al.* 2020, Kossov 2015). In 2012, Dinesh Patnaik, the then Indian Ambassador to Cambodia, said that over \$100 million worth of pharmaceuticals were sold in the country from Indian companies, an amount thought to have doubled by 2016. However, only half of these products come directly to Cambodia from India, the remainder transits through middlemen countries such as Thailand, Singapore or Malaysia (Ma 2013). Such forms of transnational business relations, whether they involve a direct Indian-Cambodia relation or go through intermediaries, have an obvious and direct influence on the exchange-value of drugs in Cambodia.

¹ According to a 2015 publication by the Cambodian Department of Food and Drugs, 90% of the pharmaceuticals present on the Cambodian market are imported (cited in Bureau-Point *et al.* 2016)

To be imported into the country, a health product must be registered with the Cambodian Ministry of Health – notwithstanding a significant number of counter examples. This registration indicates that the product officially passed quality control. As one importer explained, this suffices “to believe in the quality of the drug to be supplied” and to guarantee its therapeutic value. A number of administrative and technical tasks are required to obtain an import permit for a particular batch of registered medicine, such as requesting the manufacturer for a certificate of analysis (CoA) and reviewing it in order to ascertain that the quality of the drug complies with the stipulations of the Cambodian authorities. Then, in order to obtain an import permit, the importer submits various documents to the ministry, such as the invoice, the packing list, the bill of landing, the seaway or airway bill, the CoA, and, at times, a certificate of origin.

There are several legal ways for pharmaceuticals to enter Cambodia whether they come by sea, by air or overland: the port of Sihanoukville in the South, the airport of the capital Phnom Penh and some entry points across the borders with Thailand to the west and Vietnam to the east. These are important phases in the transnational trajectory of an imported drug before it definitely enters the national market. It is there, supposedly under the scrutiny of the inspectors of the Department of Drugs and Food, that the drugs are subject to import taxes and to a number of other requirements pertaining to quality assurance, such as storage temperature.

This latter concern is a recent one for the health authorities of Cambodia. There was no specific regulation on the temperature at which drugs should be transported and stored until the government passed a bill in 2015. This bill stipulates that storage temperatures should be respected and special equipment, such as refrigerated vehicles, used. It allows therapeutic value to be made (by ensuring drug stability) and income to be generated, both licit (by fining the outlaw) and illicit (by bribing the official). However, in a country where law enforcement remains weak, and this is especially true in the pharmaceutical milieu, the bill has yet to be implemented. It is a rhetorical tool for valuing drugs – and pleasing donor agencies – that does not translate into practice on the ground. This has a direct bearing on the exchange and therapeutic value of drugs.

I shall take the case of the airport. There are three types of warehouses, two refrigerated (2-8 °C and 15-25 °C) and one “ordinary” (above 30 °C). As most drugs are produced with clear indications about their storage temperature, which certainly better reflect the climate of Western Europe or Northern America than that of Cambodia, importers are advised to follow whatever temperature is notified on their airway bill. They are duly informed by the airport officers, but they also have the choice to not listen. In fact, the colder and longer the storage the more expensive it is (see Table 1). I heard several importers claiming they did not need refrigerated storage because they intended to come and pick up the shipment immediately. In fact, however, they would later confide they were also reluctant to pay the price. Their aim was to maximize the exchange value by lowering the costs of transport and storage. This type of valuing practice does not reflect that of experts in quality control and assurance; its primary objective is to maximize benefits. Most of the importers I discussed with do not believe temperature to be a crucial factor in drug stability. For them, the therapeutic and use value remain unchanged. This is also true for each actor in the supply chain.

Table 1: Storage prices at Pochentong International Airport (Sept. 2015)

Storage temperature for the first 6 days	
2-8 °C	Price = [USD 0.16/kg of goods x number of days] + VAT 10%
15-25 °C	Price = [USD0.12/kg of goods x number of days] + VAT 10%
Above 30 °C	Price = [USD0.08/kg of goods x number of days] + VAT 10%
Storage temperature from the 7 th day onward	
2-8 °C	Price = [USD 0.16/kg of goods x number of days] + [USD0.08/kg of goods x number of days] + VAT 10%
15-25 °C	Price = [USD0.12/kg of goods x number of days]+ [USD0.06/kg of goods x number of days] + VAT 10%
Above 30 °C	Price = [USD0.08/kg of goods x number of days] + [USD0.04/kg of goods x number of days] + VAT 10%

When shipped, as in the case of Indian products, pharmaceuticals usually travel in refrigerated containers equipped with a temperature sensor that allows any unwanted variations that could damage the drugs to be traced back. This practice of valuing, fusing evaluation and valorization, aims to guarantee the safety and quality of drugs. However, when the drugs reach the port in southern Cambodia they often remain there for several days, stored in a container and subject to the scorching heat of the country. As I could notice in the case of the airport, the importers rarely pay the additional costs required to plug the container in and turn on the refrigerating system and therefore store the drugs as needed. They know they should but they refuse to comply with this type of pharmaceutical regulation.

Once cleared, the container is driven to the company warehouse where a quality assurance officer is supposed to verify the goods. The temperature sensor memory is checked to see if it is within or outside the limits set by the manufacturer. To this purpose, the data from the sensor are sent to the manufacturer in order to obtain confirmation that the consignment can be released for sale on the market. I have never heard a case of a manufacturer from India refusing to give a green light, whatever the temperature recorded. This would bring complications and expenses, which are judged unnecessary since the drugs will be kept unrefrigerated anyway until they are sold to a patient/client.² The aim remains identical: maximizing exchange value.

The importers/distributors may also seek to gain material advantage. While some do use temperature-controlled warehouses, several others explained that although storage temperature is mentioned on the bills, it is not considered to be important. What does matter to them, however, is the green light of the manufacturer. To the knowledge of one importer, to date no samples have ever been taken for testing after a doubt arose about storage temperature. Maintaining the right temperature is costly and not judged imperative, as another importer testified:

We never cared about the storage temperature of drugs during transportation because one or two months on a boat, even in an ordinary [not refrigerated] container will never affect the

² Vaccines and other specific medicines may be set aside.

drug. For a drug, the tests for stability are done after three years. So a month or two of transportation will not affect its quality. May be this could reduce the life of the drug, say by two or three months but nothing more. This means that once the drug gets to the warehouse, its life is still available for at least 30 months, right? And anyway, not many companies wish to spend money on air-conditioned warehouses.

After being stored in the importers' warehouses, the vast majority of pharmaceuticals end up at the nodal point of private distribution, located around the Olympic Market in Phnom Penh. Dozens of wholesale pharmacies provide goods to smaller retailers of varying size who are responsible, with their larger counterparts, for distributing the medicines in the country. Drugs are often transported from Phnom Penh using the distributors' own vehicles,³ as well as by private pickup trucks or collective taxis, which transport pharmaceutical products alongside their clientele. Further away from the capital and the main towns, the mobilization of resources becomes more diverse: vans from drugs suppliers pass regularly in the villages, but drugs can also be found on the backs or roofs of minibuses, on the back of a motorcycle or pulled on a trailer. When the situation allows, medical representatives are also involved in the supply. As we have shown elsewhere (Quet *et al.* 2018), these alternative supply routes contribute to regulating pharmaceutical flows; they form the logistical backbone of unofficial regulation. They also constitute an answer to the problem of pharmaceutical distributors offering fairly large quantities which do not suit small scale pharmacies. This applies to NGOs workers involved in health programmes, who may order their supply by phone and get them to their province by the same private minibuses that carry people and all kinds of goods. It is thus by following heterogeneous routes that drugs end up in rural pharmacies.

Modes of transportation may vary in shape or form, but they are united by one critical characteristic: the near absence of refrigeration. Outside observers may see refrigerated vehicles on the roads, such as the small *remok* (named after the French "remorque" for trailer), two-wheeled refrigerated trailers attached on a motorbike and used to transport drugs and cosmetics in towns. This does not mean that the refrigeration is turned on, as I noted on many occasions. The operators turn the system off simply because it is petrol-consuming. It is a form of economic valuation that helps to save money and thus increase the exchange-value of the product. Supply vans, *remok* and motorbikes also provide information on a different valuation practice, still located in the realm of money but encroaching on issues of time-saving and material retribution. As far as buyers are concerned, particularly those in rural areas, outsourcing drug transportation offers two advantages. Pharmacies owners say they save time and money because they do not have to travel all the way to Phnom Penh. And furthermore, as also observed by Ovesen and Trankell (2010), some suppliers provide incentives by rewarding their clients in the form of discounts, free samples or presents, such as electric fans, rice cooker and the likes.

One can certainly understand why there is no real concern for storage temperature of common pharmaceuticals. After all, the vast majority will be kept in open air pharmacies, sometimes in full sun.⁴ Why store a drug for a month or two in optimal conditions when it will spend several months or years in the heat of rural pharmacies? Why should anyone spend money on unnecessary forms of storage and therefore decrease the exchange value of the drugs? By focusing on the exchange value of drugs, however, most businessmen – here I

³ Drug distributors are called "pharmaceutical companies" in Cambodia whether they produce drugs or not. Also, the same company may be both importer and distributor.

⁴ Vaccines may be an exception. I have seen them transported in refrigerated vehicles and ice boxes, but I also saw them delivered to the wholesale market of Phnom Peng exposed to the ambient temperature several times in August 2016.

include importers, distributors and drug sellers – pay little attention to their actual therapeutic value and ignore the potential deleterious effects of their actions. This is a complicated question that brings together problems related to the structural constraints of the country, to the paucity of the health system and to public health concerns. However, high temperatures can modify the molecular structure of pharmaceuticals and render them inactive or toxic.⁵ The question of temperature in transportation and storage is not anecdotic. It also shows that there is a possible correlation between material gain and material degradation, as if the increase in exchange value was consubstantial in such circumstances to a decrease in therapeutic value.

The sites and situations examined in this section also help to unearth three main “registers of valuing” (Heuts and Mol 2013) drugs. The first involves activities by importers, suppliers and buyers who are mainly concerned with *money* and aim to increase exchange value. The second refers to official regulatory practices of valuing drugs, as in the case of the airport, as a means of improving drug stability, safety and *quality*, and therefore of maintaining or improving therapeutic value. The third is embedded into the second and is largely *political*. It relates to the rhetoric of valuation, as is the case with the 2015 bill. This third register, which also claims to be concerned with quality, requires a certain practice of rhetoric. It certainly has a legal value but until it is implemented it mainly applies to the realm of symbolic value, which is very useful in the political arena to stage good governance, render donors and the regional ASEAN happy, and request grants. The bill does not need not be implemented to achieve these aims. These three registers of pharmaceutical valuation – money, quality and political registers – constitute distinct operating modes in the making of value. This is not to say they are fixed or impermeable. The acts of valuing and their respective registers overlap in practice, just as the actors from all sides may span from one register to the other. Although the regulatory agencies oppose money-making at the expense of quality, importers, distributors and buyers do not necessarily see a contradiction. Some of them firmly believe that maintaining the right temperature during transportation and storage has no significant impact on the drug and its use value. They do however have an understanding of and a concern for therapeutic value. The achievement of political aim through pharmaceutical regulation is not confined to a single register either, all attempts to ensure pharmaceutical safety and quality show political ambitions. Similarly, the official vitrine of the government does not always reflect its agents’ practices, especially when they are prone to bribery and corruption. They also value the drug in their own way in order to gain some material benefits. For all parties involved, there is a temptation to circumvent official regulations and laws. The next section will pursue this issue further.

Temptations, or how illicit practices make value

I spent a couple of months with a drug seller who did not bother at all about temperature. Her pharmacy is located right on a dusty road in the vicinity of Phnom Penh. Kimly usually stays behind her counter, waiting for clients. She organizes the drugs by therapeutic family on open shelves fixed to three walls. In the middle of the room stands a small mobile shelf, in which she keeps more medicines. She is unqualified and sometimes works with the help of her husband and young daughter. In Cambodia, drugs outlets and pharmacies are often treated as any other form of family businesses.⁶

⁵ Numerous studies show that drug stability is affected by high temperature, as well as by a high degree of humidity. See, for example, Baratta *et al.* (2012).

⁶ This is to the point that all members of the family may be called *pet*, or “doctor” (Bureau-Point *et al.* 2020).

One afternoon in September 2015, as we were drinking cold jasmine tea, Kimly stood up and suddenly kicked the mobile shelf towards the back of the room. Arrived on two small motorbikes were inspectors from the Department of Drug and Food (DDF). The men asked the usual questions, presented papers to be signed, and quickly checked the expiration dates on random medicines. They did not take any samples for quality control. Kimly politely answered all questions, showed the orders she made to a wholesale distributor and declined having, to her knowledge, counterfeit drugs. The inspectors left after a cup of coffee. This is how I learnt that the mobile shelf contained drugs imported without taxes; that is, illicit drugs. It was easier for Kimly to store them there so that they could disappear from sight with a single kick.

The flexible nature of state-directed pharmaceutical regulation in Cambodia, particularly prone to very high levels of corruption,⁷ means that a sizeable share of the drugs imported by legal distributors can enter illegally. These are real drugs that enter the country without passing through the official, money-consuming channel. And indeed, there are ways for an importer to pay taxes on only a part of his shipment and pay bribes for the rest. These latter drugs, which do not carry the small vignette that indicates that taxes have been paid, have a particular value to prescribers like Kimly. The supply channels are identical but the drugs are cheaper. While they are considered to be good quality, they involve risk-taking. This is why the value of these drugs commanded a specific valuing act of ascribing a defined location in Kimly's pharmacy, separated from the rest to better hide them when necessary. By taking illicit routes and gaining an illegal status, these drugs acquire conflicting (but coexisting) forms of value. Their use and therapeutic values remain unchanged, but a higher exchange value comes at a price – that of being caught for fraudulent practice. This presents a different articulation than in the case of transportation and storage, where there is no law enforcement. Here, an increase in exchange value does not affect therapeutic value, but it does have a bearing on legal value. It is the prescriber herself who may be legally (and morally) accused of infringing the rules set by institutional regulatory bodies. Her register of valuing also involves monetary aims, but not without a good dose of risk-taking. She engages in activities that not only produce better exchange value but may also generate complications with law.

This kind of risk-taking is common in Cambodia. It happens at virtually each stage of the drug supply chain. And temptations are frequent. A look at the national border shows a staggering example. A few years ago in a dark alley of Rong Klua Market in Aranyaprathet, Thailand, I came in contact with Cambodian drugs traffickers who arranged for two trucks to be loaded with pharmaceuticals and cosmetics. This took place in an “open market” (Peterson 2014) that made it difficult, if not impossible, to ensure full regulation and traceability. The road to Phnom Penh, which goes through the former Khmer Rouge bastion of Poipet, is risky since there are still many checkpoints where vehicles can be searched and conductors interrogated. Although they were totally legal in Thailand, these pharmaceuticals gained a new (illegal) status by crossing the border. Mobility along a transnational route plays a significant role in transforming these objects, which are transient and susceptible to circumstances.⁸ The presence of a border and of a new national environment dramatically changes their worth. The context in which the object is situated here brings about a shift in category: from being a legal pharmaceutical it becomes illegal, in a movement that signals the ‘fragility of objecthood itself’ (Appadurai 2006). This modifies the status of pharmaceuticals as much as it blurs their trajectories and the circuits taken. However, having close relations

⁷ In 2019, Cambodia was ranked as the most corrupt country in Southeast Asia and one of the world's infamous leaders (Transparency International 2020).

⁸ For detail on this analytic grid on the transient nature of pharmaceuticals, see Pordié (2014).

with high ranked authorities, the traffickers arranged for two army trucks driven by military men to ensure that they would not be stopped at the checkpoints. By taking an alternative circuit and avoiding any kind of formal taxes, the shipment also gained significant value. This came with a higher level of risk-taking than Kimly's, but significantly lower, as one trafficker told me, than dealing with drugs "like heroin or methamphetamines because being caught for pharmaceuticals does not weigh the same in front of justice". This is a way of valuing drugs as a relatively safer type of trafficking than that of other products. Risk plays a central role in the making of exchange value, whether it is a matter of Kimly concealing drugs and taking the risk of being caught or that of the traffickers smuggling pharmaceuticals and taking a lower risk, if caught, than with "recreational" drugs.

However, in both cases the risk is personal and does not (deliberately at least) involve the consumer. In other words, it does not affect the therapeutic value of the goods. To understand how the therapeutic value may be affected, I must briefly use two last examples. Local importers and manufacturers have developed strong links with Indian counterparts over the years. Indian companies have representatives in Cambodia, who facilitate and negotiate commercial transactions. Many firms in the Kingdom import raw materials from India, including active principles and excipients, and naturally try to obtain them as cheaply as they can. And this applies even if it means buying expired active principles. In such a case the Cambodian firm is producing new drugs from old materials, ascribing them a new identity (as generics) and most importantly, a new expiry date. "This is how a drug can live five years longer than it should," sadly explained a former DDF officer. This dangerous situation illustrates that time is a precious value for pharmaceuticals, whether they are within the limits of a given interval (good therapeutic value) or beyond (poor therapeutic value and increased exchange value).

Time is a precious value since the longer the drugs can remain on the shelves the more money the sellers may make, irrespective of their actual period of expiry or, simply, of their quality. In Cambodia, all attempts are made by some manufacturers to ensure that their drugs go through post-marketing screening without hiccup. The heads and representatives of major manufacturers are all too familiar with the intricacies of quality inspections and the inspectors themselves. They thus exemplify the complex social and political mechanics that animate the relationship between business people and the State, fed as it is by their respective interests (Bourdier *et al.* 2014). As I could notice in the case of an Indian firm in Phnom Penh, it is not uncommon for inspectors to receive cash or presents, in the form of travel or five stars dinners, under the guise of "good friendship." The direct consequence of such acts is that the brands concerned are not subject to random quality control testing at wholesale pharmacies or small drug outlets. The manufacturer is not concerned about the therapeutic value of a product but seeks to increase pharmaceutical sales, whether the drugs are fake, deteriorated or expired. Interestingly, as a former DDF officer told me, this carries through the supply chain and explains why certain brands can repeatedly be found to be expired. At this point of the discussion, we have a wider overview of pharmaceutical value, as it overlaps with questions of exchange and money, therapeutic efficacy and toxicity, and ultimately corruption, risks and justice.

Repackaging drugs, producing values

There are yet more resources within the pharmaceutical object which help to shed light on unique forms of value production. Drawing from science studies, I will look at pharmaceuticals as technical devices (Akrich 1996) so as to highlight the links between their

material characteristics and the associated forms of use. I am interested in how, once they arrive at a pharmacy in Cambodia, the values of pharmaceuticals go through multiple and radical changes.

I must first make a quick detour via India where the drug Septilin is produced as a means of boosting the body's own defence mechanisms. The manufacturer is Himalaya Wellness, a firm established in 1930 and known until recently as The Himalaya Drug Company.⁹ It is a world leader in the production and global diffusion of Ayurveda, a form of traditional medicine in India. Indeed, the company does not produce biomedical drugs but natural pharmaceutical specialties made of parts or extracts of plants and minerals. A modernist industry since its inception, Himalaya Wellness has developed its own innovation model, with increasing levels of conceptual and technological sophistication over time, based on the use of classical recipes established in ancient texts to create new herbal medicinal formulae indicated for biomedical disorders (Pordié and Gaudillière 2014). The firm is convinced they have been adding value to Ayurveda itself by “modernizing” the old tradition so that it fits the demands of our times. This type of firm is not uncommon among ayurvedic industries in India, but the material organization, management and personnel profile at the firm together with the reformulation, business and marketing practices have brought the pharmaceuticalisation of Ayurveda to its climax (Pordié 2014, 2015). This is why it is difficult to distinguish these drugs from those produced by mainstream, multinational companies.

Himalaya Wellness is a very successful enterprise and the firm has managed to market over 200 innovative medicinal formulations, export to more than 90 countries, and obtain approval and certifications from the stringent regulatory environments of Europe and North America (such as ISO 9001:2000 in 2003). The company's global turn took place in 1975, long before economic liberalization, when the regulatory environment in India did not encourage global expansion. The drug Septilin is exclusively imported to Cambodia by a firm with Indian origin, the headquarters of which are located in Singapore. Septilin's itinerary first takes it to the commercial port of Sihanoukville, then to the warehouse of the importer, the wholesale market of Phnom Penh and finally to the pharmacies. The circuits may be licit or illicit, or partly licit and illicit. As with other mobile pharmaceuticals, the value of the drug fluctuates according to the type of circuit taken (licit and/or illicit), the actors involved and the nature of the transactions and negotiations. Once at the pharmacy, the value of this herbal drug does not remain static. It soon undergoes a major transformation.

Pharmacies play a key role in Cambodian healthcare. The majority of the population only consult medical doctors for specific or serious cases, and they feel at ease with their drug sellers where they can get any type of medicine without requiring a prescription.¹⁰ For the patients, pharmaceuticals have a better exchange value when they are bought directly at the pharmacy where they obtain the same services as at a medical consultation but without paying for clinical consultation. Besides making diagnoses and carrying out treatment, the personnel of the pharmacy, especially in the rural areas, know the patients' family backgrounds, constraints (economic and otherwise) and expectations. Sellers see their knowledge of patients' expectation as a formidable quality because without it they would gradually lose their clientele. Thus, when a person comes and explains her problem, the drug seller does not impose a predefined posology but asks the patient about the desired duration and sometimes

⁹ I actually came back to Cambodia in 2014 to extend the work I have been doing in India on this company since 2011 (Pordié 2012, 2014, 2015; Pordié and Gaudillière 2014). I selected Cambodia to examine the global diffusion of Himalaya's products because I was familiar with the country and the Khmer language – I worked and researched there for several years in the mid-1990s.

¹⁰ There is a law on prescription drugs but it is never applied.

about the nature of the treatment itself. This situation is determined by local representations on the efficacy of certain drugs, such as injectable drugs, and the rampant poverty. The seller, however, maintains an active role (as both physician and pharmacist).

These practitioners are usually unqualified (see also Om *et al.* 2017: 4). In 2010, only 5% of qualified pharmacists worked in their own pharmacy despite the presence of several thousands of them in the country (Ovesen and Trankell 2010: 239). This situation can be explained by the difficult history of Cambodia's civil war. The Khmer Rouge regime (1975-1979) brought about the assassination of the elite, including most pharmacists and medical practitioners. Additionally, the relatively well-enforced official pharmaceutical regulation, such as drug registration, of the 1960s and 1970s disappeared during this period.¹¹ When drugs became newly and gradually available in the following years, a new market took shape and many families with no or little knowledge of drugs got involved in the business. Selling drugs was perceived as an activity among others. When the first post-civil war generation of graduates began working in the late 1980s, the trade in pharmaceuticals was already dominated by unqualified sellers and entrepreneurs (*ibid.*). The trained pharmacists had low resources and so could not secure urban property when in 1994, the trade of pharmaceuticals was banned from ordinary markets. This ban initially served political aims, like the 2015 bill on drug transportation and storage of drugs. Drugs did however continue to be sold in the markets (Pordié 1996). Many families involved in pharmacy businesses during the first years of national reconstruction kept their activities and came to form lineages of drug sellers – some descendants later taking up pharmaceutical studies. As shown in Nigeria by Peterson (2014), the years of civil war greatly influenced the demographics of pharmaceutical practice.

Nowadays, unqualified drug sellers most often rent the license that paradoxically legalizes their outlet.¹² This is a type of governance that partially circumvents state-directed regulation. By renting out their license to unqualified sellers, institutionally educated pharmacists can add to their monthly income. The licenses are generally rented for somewhere between USD 100-150 a month, depending on size, frequentation and location. A new law was passed in 2016 stipulating that pharmacies within clinics must be staffed by pharmacists – prior to that an employee or family member of the physician would do the job. This new legal framework has opened up more lucrative opportunities for qualified pharmacists, since they can now rent their license at a better price value in such clinics, deemed more profitable than standalone drug outlets. This certainly plays a role in the larger meaning of pharmaceutical value in Cambodia. Both qualified pharmacists and unqualified sellers find convergent interest in this form of valuing practice. This practice is very common and does not worry many people, not even the pharmacists employed by UN agencies involved in pharmaceutical regulation. Kimly's pharmacy, for example, was indicated to me by a pharmacist in charge of quality control programs at the UN. This is where she was renting her own rights to open a pharmacy. Unqualified personnel thus regularly obtain a license from this kind of pharmacist, otherwise busy with their work for the government, at the hospital or for international organizations. Everybody is aware of this fact, including the health authorities, but they all seem to ignore the situation and tolerate the widespread use of

¹¹ After about ten years of post-war guerilla activity, the private sector started to build its network in 1989 (Pordié 1996), but it took nearly a decade for it to be fully organized. The public sector gradually took shape and took on its current format from 1996 onwards through international cooperation interventions and the involvement of a foreign consultant who spent several years on this project. For an overview of the history of pharmaceuticals in Cambodia, see Bureau-Point *et al.* (2020).

¹² There are still some unlicensed pharmacies in the country, mostly located in the rural areas although some may still be found in Phnom Penh too, but their number has dramatically shrunk after the government took action in recent years (see Burki 2010). Their status today is ambiguous and they benefit from a certain level of tolerance – and are subject to higher level of government “taxation”.

these invisible nominees. This configuration is the result of the civil war, the relative absence of law enforcement and the need to provide healthcare in all provinces.

These men and women are trained on the job by relatives, medical representatives or through their own practical/clinical experience (which also includes learning from physicians' prescriptions when this applies), or more recently by official government training programs run by a local NGO. They do have specific knowledge about drugs. This is not limited to pharmaceutical knowledge properly speaking; it also includes considerations which could still be called "pharmaceutical" but which escape the kind of teaching provided in specialized faculties. These practitioners are therefore seen as specialists by their clients, irrespective of the fact that they may or may not be officially qualified. Their originality resides in the creation of *thnam phsom* (tr. *phsam*), which translates as combined (*phsom*) medicines (*thnam*). A *thnam phsom* is an assortment of individual drugs sold to patients in small plastic bags. In order to create (therapeutic) value, the sellers consider various characteristics in selecting the drugs that will make up the combination. The most central consideration pertains to a register of valuation that bears on the quality of treatment. They tend to associate various pharmacological families (antalgic, antipyretic, antibiotic, steroids, vitamins) or to combine several drugs indicated for a similar disorder (as may be the case for diarrhea). Both the sellers and their clients place an importance on the provenance of the drugs, which signals efficacy and therefore therapeutic value, as well as price.¹³ Drugs produced in France, for instance, are generally considered to be strong (*khlan*), which means efficacious in this case, and are generally more expensive than Thai or Indian medicines. Perceptions of quality are informed by the perceived prestige of France dating from the protectorate period, its medical infrastructures and the fact that France, via the International Committee of the Red Cross, was the original supplier of pharmaceuticals until 1982 (Philippides 1984: 245). The practice of mixing medicines may also fall under a register of valuing drugs that involves esthetics. The colors and the forms of the drugs to be associated are considered; for two identical products, the color can influence the choice. Various sellers explained that a flashy combination is more attractive – although this parameter does not take precedence over ideas of quality. On the other hand, it is useful for consumers to be able to recognize their combinations and so color thus influences use value. Finally, therapeutic value also stems from a register of valuing drugs that involves temporality: drugs recently imported to the Cambodian market are considered better than competing treatments, perhaps because of their higher prices. Colors, shapes, provenance and ascendance are all part of a valuing practice that forges the kind of symbolic value that drugs may at times incarnate. This is coupled with local perceptions of therapeutic and exchange value, which are all embedded in these little plastic bags. For instance, drug sellers tend to augment the dose of each medicine when they give a single dose treatment, which poses a new set of problems pertaining to therapeutic value. They also sometimes prevent patients from identifying the ingredients that compose the final mix to make sure they come back in case the treatment works. Thus concealing the nature of the medicine aims at creating short- to mid-term exchange-value.

These little bags are among the most common prescription regimen in Cambodia.¹⁴ Though the resulting *thnam phsom* often challenge the established rules of public health and pharmaceutical practice, they carry a sought-after pharmaceutical value. They are adapted to

¹³ Bureau-Point *et al.* (2020) also remark that patients sometimes request "French medicine". These authors broach the question of *thnam phsom* in an interesting study on self-medication.

¹⁴ Liquid forms of *thnam phsom* are, however, less frequent. Medicines can there be combined together in small bottles as in the treatment of diarrhea for children, such as mixing a liquid anti-diarrheic and liquid paracetamol in a bottle of metronidazole.

people's needs and expectations, and resonate with their visual, imaginary and economic universes.

The Cambodian Ministry of Health, together with the World Health Organization, are trying to ban this practice with their joint program on antibiotic resistance. Thus in 2016, they disseminated warning messages on the capital's billboards and broadcasts on national TV and the Internet.¹⁵ However, *thnam phsom* is not the only pharmaceutical malpractice that exists in the country, nor are unqualified drug sellers the sole depositaries of wrong-doing. Inadequate knowledge and incentives to please clients ensure that unwanted practices are also common among certified pharmacists and public and private physicians alike (Chareonkul *et al.* 2002, Om *et al.* 2017, Pilsczek 1999). An increasing number of younger trained pharmacists who are well aware of the dangers of combining drugs (from drug resistance to intoxication), do not favor the practice of mixing drugs. This does not mean however that they stop this practice in their own outlets. As one of them said: "if I don't sell *thnam phsom* to [my clients], I will never see them again". These plastic bags take precedent for monetary reasons. They are valued by all parties involved in pharmaceutical/clinical relations.

This is how the lay rules of diagnosis and pharmaceutical combination in Cambodia have led to the inclusion of Septilin, the Indian ayurvedic "immunity booster", in a combination prescribed for the treatment of sleeping disorders, together with an antalgic and a couple of vitamins. Its therapeutic value was dramatically transformed. Talking about this unique, but logical association between diagnosis and treatment, the drug seller explained that although she was unaware that it was a herbal drug,¹⁶ she knew it was doing something to strengthen the body's defenses – she learned that from a medical representative. She said that if someone had trouble sleeping, she or he would be exhausted and probably have a headache. A paracetamol pill and a Septilin tablet would then do the job, together with some vitamins for good measure.

The plastic bag is the point of convergence of the transnational trajectory of each of its ingredients. This also means that the drugs continue to circulate in a new form with new indications. These extemporaneous practices form the end of a mobility continuum that ranges from global spheres to situated localities. Narrowing down the scalar perspective thus makes it possible to observe the connection between a certain epistemic configuration, singular forms of professionalization and the market.

The practice of mixing medicines does not only create this type of (dangerous, but valued) polytherapy nor does it only make for a better exchange-value just because patients are eager to buy *thnam phsom*. There is an important valuation reasoning behind the unpacking of pharmaceuticals that relates to money and exchange value. In fact, these medical cocktails generate a higher income for the prescribers. Each pill in the bag is sold for a higher price as a single dose than it would be for a longer period of treatment. *Thnam phsom* are a means of increasing profits. These are the reasons why not only individual sellers and pharmacists but also some bigger retailers and pharmaceutical companies, are all involved in mass-producing – or rather, mass-repackaging – widely accessible pharmaceutical goods with

¹⁵ The terms used in these contexts are *thnam phsah* (tr. *phsah*, that heals, a generic term for antibiotics) and not *thnam phsom* (tr. *phsam*). The campaign however did refer to over-the-counter polytherapy, in the specific case of antibiotics.

¹⁶ Creating new ayurvedic pharmaceuticals at Himalaya Wellness involves merging and mixing medical paradigms and categories but Ayurveda is somewhat downplayed. Not only do they look like biomedical drugs, all pharmaceuticals produced by the firm are endorsed by a number of scientific publications and their pharmacology is not presented in ayurvedic language, but exclusively in biomedical terms (Pordié 2015). This coupled with the fact that the drug seller was not versed in English led her to believe it was made of chemicals.

contested therapeutic value, as we have learned elsewhere from Dumit (2012a).¹⁷ These standardized combinations are then sold to smaller retailers or groceries. The legal or illegal production of *thnam phsom* appears as a lucrative pharmaceutical standard – a cottage form of “prescription maximization” (Dumit 2012b) – to be marketed for a series of ailments. Adding an ontological twist to this situation, we could say following Graeber (2013) that it is value that brings the pharmaceutical into being.

Conclusion

It is now time to tie the threads together. In each of the three key themes presented in this paper, the making of pharmaceutical values occurs inside and outside official regulation, legal practices and sanctioned public health regimes. This configuration of the “pharmaceutical nexus” (Petryna and Kleinman 2006) goes far beyond industries, policies and standards. This paper has thus attempted to contribute to the existing literature in pharmaceutical anthropology, by placing itself tangentially on works concerned with pharmaceutical value but firmly located within the official realm (Dumit 2012a; Sunder Rajan 2017). In Cambodia however, an in-between, grey universe of social relations and material arrangements, entangled in licit and illicit circulation and practices, forms the breeding ground for creative and sometimes risky modes of valuation. This is how the grey political economy works value.

This is not only true for Cambodia. Grey political economies are ubiquitous, inescapable realities. In Nigeria, for example, shady networks and practices helped restock the country with pharmaceuticals (Peterson 2014). Elsewhere, in Kinshasa, the overlap between legal and illegal spheres has made some small traders new figures of economic success, while others have succeeded as intermediaries facilitating business (Ayimpam 2014). Examples may be found in literally every concern of the planet. A grey political economy is a site of social, material and epistemological creativity that forms and informs value. It rearranges the preexisting framework established by manufacturers, regulators and prescribers on the valuation of drugs, their cost and the practices associated with them. This is not anarchy (e.g. Gollogly 2002). While it might be true that such a type of political economy is a major factor in holding back inclusive development, sabotaging state-led growth or prohibiting fair market competition in some countries (Kabra 2016, Moges 2008), perhaps even in Cambodia, it nevertheless has more to tell to the anthropologist. The grey political economy is multivalent and highly adaptable to circumstances. It certainly generates inequalities and dangers but also opportunities and income. It sets the tone for alternative forms of market construction. It is a complicated beast to deal with for both the analyst and the regulator. The Cambodian situation, however, shows that ordinary people are at ease with it. They reject criminality outright but most do not really condemn trickery and other, perceived as non-harmful, illicit means of getting by. The facts may counter this appreciation – think of drug stability or prescription malpractice – but there is however a tacit acceptance of minor deviances.

The grey political economy of drugs also complicates our understanding of profits derived from pharmaceuticals. At every twist and turn of the supply chain there is a possibility of increasing profits. The value of pharmaceuticals thus appears as highly flexible and unstable but at the same time immensely expendable as well. It is this instability that

¹⁷ Standardized *thnam phsom* are produced in Cambodia and the neighboring countries of Thailand and Vietnam, as I have seen in the border areas. While low scale mass production by pharmacies is not new, as I already noted in the mid- and late-1990s, the involvement of cottage industries is more recent. I do not have precise information in this regard.

leads to a remarkable expandability of profit – especially as pharmaceuticals are being channeled through the unofficial and illicit markets. As such it leads to the (re-)distribution of riches that can be yielded from pharmaceuticals, which are otherwise only being seen as accumulating in the hands of a few official actors, such as the state (tax), companies and licensed pharmacists. This redistribution however happens at the increased risk both for consumers and the various distributors – from established firms to truck drivers and unqualified pharmacists – who flaunt various regulation and standards, and take advantage of vernacular understandings of the efficacy of drugs. Creativity and risk are the means towards the expandability of profit.

It is in this context that value-making has brought to light matters of exchange and money, therapeutic efficacy and toxicity, prescription modalities and epistemology, and corruption, risks and justice. This paper has also shown that there is no systematic one-to-one conjunction between practices of valuing drugs and pharmaceutical values. Operating modes in the creation of value work as a messy assemblage of practices; they interact, complement each other or coexist in opposition. In some instances, drugs are supposedly stored under controlled temperatures while in others they travel freely on random minibuses. Elsewhere, sellers assemble drugs through singular epistemological and pharmacological logics and consumers recognize them by their colors or shapes. Some have no qualms in discarding the law and indulging in risky behaviors, while financial constraints force others to take single doses of antibiotics despite public health warnings. People value drugs for a vast number of reasons.

Altogether these motivations have been grouped under distinct but overlapping ‘registers of valuing’ drugs (Heuts and Mol 2013). These registers revolve around money, quality, political representation, esthetics and temporality. Turning the refrigeration off during the storage or transportation of drugs, smuggling pharmaceuticals, seeking a direct trade between India and Cambodia, preparing *thnam phsom* and buying *thnam phsom* are a matter of money. Turning the refrigeration off, registering drugs and preparing *thnam phsom* are a matter of quality. Similarly, registering drugs, passing regulation bills or seizing counterfeit medicines are a political matter, just as preparing *thnam phsom* and upgrading a drug outlet relate to esthetics. Importing expired raw materials, valuing newly imported drugs as more efficacious or regulating sales on expired pharmaceuticals all bring temporality into play. Identical valuing practices may fall into different registers. What complicates the situation is the fact that each register is tied to one or more forms of pharmaceutical values, and that each of these values stem from practices located within one or several registers.

The exercise carried out with the five main registers has thus been repeated with values. A number of them can be ascribed to pharmaceuticals: exchange value, therapeutic value, use value, symbolic value and legal value. When there is a correlation between the register of money – turning the refrigeration off, taking legal risks, making and buying *thnam phsom* – and exchange value, for example, the interaction always takes place with the intervention of other forms of values. Manufacturers who use expired raw materials increase the exchange value but they also alter the use, therapeutic and legal values of drugs. Smuggling real drugs into the country increases exchange value and impacts legal value but does not change either use or therapeutic value. Similarly, the epistemological heterodoxies of drugs sellers bear on exchange, therapeutic, use, and symbolic values, and cover all identified registers of valuing. Use and therapeutic values are not always correlated, as shown by the esthetics of the *thnam psohm*, where use value increases (recognition of the color or shape of the components) and therapeutic value decreases (pharmacological associations, posology). It is not necessary for this demonstration to reorganize all other forms of entanglement between esthetics and politics on symbolic value, or between quality and temporality on therapeutic

value. We should bear in mind that drug circulation is embedded in numerous and changing practices of valuing that themselves modify the attributes of drugs and their values in multiple ways.

Drugs go through circuits that traverse many locations and are deployed on several scales. From countries in Asia and Europe to manufactures in India, ASEAN regulators offices in Jakarta, warehouses in Phnom Penh and small outlets in the depth of Cambodia, pharmaceuticals are always valued one way or the other. This configuration forms a complex horizon that underlines the crucial role of circulation in value-production and signals the irreducibility of pharmaceutical values to a single monolith. This multiplicity is at the core of pharmaceutical value-making. It is an important reason why value itself enters into dialogue with many aspects of social life, including knowledge forms, politics and the market.

Acknowledgements: This research has been conducted in the framework of the ERC-funded project GLOBHEALTH. The author also benefited from an initial grant from the IRASEC in Bangkok, Thailand.

References

- Akrich, M. (1996). Le médicament comme objet technique, *Revue Internationale de Psychopathologie* 21: 135-158.
- Appadurai, A. 2006, 'The Thing Itself', *Public Culture*, 18 (1): 15-21.
- Appadurai, A. (1986), Introduction, in A. Appadurai (ed.), *The Social Life of Things: Commodities in Cultural Perspective*, Cambridge: Cambridge University Press.
- Ayimpam, S. (2014). *Economie de la débrouille à Kinshasa. Informalité, commerce et réseaux sociaux*, Paris: Karthala.
- Baratta, F.; Germano, A.; Brusal, P. (2012). Diffusion of counterfeit drugs in developing countries and stability of galenics stored for months under different conditions of temperature and relative humidity, *Pharmacology* 53: 173-184.
- Beaudevin, C.; Pordié, L. (2016). Diversion and globalization in biomedical technologies, *Medical Anthropology* 35(1), 1-4.
- Birch, K. (2017). Rethinking value in the bio-economy: Finance, assetization, and the management of value, *Science, Technology, & Human Values* 42(3): 460-490.
- Bourdier, F.; Man, B.; Res, P. (2014). La circulation non contrôlée des médicaments en Asie du Sud-Est et au Cambodge, *L'Espace Politique* 24: online (URL: <http://espacepolitique.revues.org/3220>).
- Bureau-Point, E.; Baxerres, C.; Chheang, S. (2020). Self-medication and the pharmaceutical system in Cambodia, *Medical Anthropology*, published online on April 30.
- Bureau-Point, E.; To, M.; Baxerres, C. (2016). Automédication ou Prescription ? Les relations entre les vendeurs et les acheteurs de médicaments au Cambodge, in *Actes du Colloques « L'automédication en question »*, Nantes: Université de Nantes.
- Burki, T. (2010). The real cost of counterfeit medicines, *The Lancet Infectious Diseases* 10(9): 585-586.
- Buzinde, C.; Yarnal, C. (2012). Therapeutic landscapes and postcolonial theory: A theoretical approach to medical tourism, in: *Social Science & Medicine* 74(5), 783-787.
- Chareonkul, C.; Khun V.L.; Boonshuyar, C. (2002). Rational drug use in Cambodia: Study of three pilot health centers in Kampong Thom Province, *Southeast Asian Journal of Tropical Medicine and Public Health* 33(2): 418-424.

- Chaudhuri, S. (2013). The pharmaceutical industry in India after TRIPS, in H. Löfgren and O. Williams (eds.). *The New Political Economy of Pharmaceuticals*, Palgrave Macmillan.
- Dumit, J. (2012a). *Drugs for Life: How Pharmaceutical Companies Define Our Health*, Durham, NC: Duke University Press.
- Dumit, J. (2012b). Prescription maximization and the accumulation of surplus health in the pharmaceutical industry: The_Biomarx_Experiment, in K. Sunder Rajan (ed.). *Lively Capital*, Durham, NC: Duke University Press.
- Eiss, P.K.; Pedersen, D. (2002). Introduction: values of value, *Cultural Anthropology* 17(3): 283-290.
- Elyachar, J. (2005). *Markets of Dispossession: NGOs, Economic Development, and the State in Cairo*, Durham, NC: Duke University Press.
- Gesler, W. (1992). Therapeutic landscapes: medical issues in light of the new cultural geography, *Social Science & Medicine* 34(7): 735-746.
- Gesler, W.; Morag Bell, S.; Curtis, P.; Hubbard, S. (2004). Therapy by design: evaluating the UK hospital building program, *Health & Place* 10(2): 117-128.
- Gollogly, L. (2002). The dilemmas of aid: Cambodia 1992–2002, *The Lancet* 360(9335): 793–798.
- Graeber, D. (2013). It Is Value That Brings Universes Into Being, *HAU: Journal of Ethnographic Theory* 3(2): 219-243.
- Graeber, D. (2001). *Toward an Anthropological Theory of Value: The False Coin of Our Own Dreams*, New York: Palgrave Macmillan.
- Hancart Petitet, P. (2015). La « pilule chinoise » au Cambodge. Biographie d'une technologie contraceptive controversée, in A. Desclaux et M. Ergrot (eds.), *Anthropologie du médicament au Sud. La pharmaceutisation à ses marges*, Paris: L'Harmattan.
- Hayden, C. (2007). Taking as Giving: Bioscience, Exchange, and the Politics of Benefit-sharing, *Social Studies of Sciences* 37(5): 729–758.
- Hayden, C. (2003). *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico*, Princeton: Princeton University Press.
- Henry, R.; Otto, T.; Wood, M. (2013). Ethnographic artifacts and value transformations, *HAU: Journal of Ethnographic Theory* 3(2): 33-51.
- Heuts, F., Mol, A (2013). What is a good tomato? A case of valuing in practice, *Valuing Studies* 1(2): 125-146.
- Hira, A. (2009). The political economy of the global pharmaceutical industry: Why the poor lack access to medicine and what might be done about it, *International Journal of Development Issues* 8: 84-101.
- Ira, G. (1976). Production, Circulation and Value, *Economy and Society* 5(3): 243-291.
- Kabra, K. (2016). Time to end the marriage of bad money and bad politics, *GovernanceNow* 7(16): 22-23.
- Kluckhohn, C. (1966 [1958]). The scientific study of values and contemporary civilization, *Journal of Religion and Science* 1(3): 230-243.
- Kossov, I. (2015). Indian drug-makers push for market growth, *Khmer Times*, March 17.
- Löfgren, H., ed. (2017). *The Politics of the Pharmaceutical Industry and Access to Medicines: World Pharmacy and India*, New York and London: Routledge.
- Ma, L. (2013). Indian Ambassador discusses trade ties, *The Phnom Penh Post*, 19 July.
- Moges, K. (2008). *Policy-induced Barriers to Competition in Ethiopia*, CUTS Centre for Competition, Investment & Economic Regulation, Jaipur, India.
- Om, C.; Daily, F.; Vlieghe, E.; McLaughlin, J.; McLaws, L. (2017). Pervasive antibiotic misuse in the Cambodian community: antibiotic-seeking behaviour with unrestricted access, *Antimicrobial Resistance and Infection Control* 6(30): 1-8.
- Ovesen, J.; Trankell, I.-B. (2010). *Cambodians and their Doctors: A Medical Anthropology of Colonial and Post-colonial Cambodia*, Copenhagen: NIAS Press.

- Peterson, K. (2016). Volatility, speculation, and therapeutic revolutions in Nigerian durg markets, in J.A. Greene, F. Condrau and E. Siegel Watkins (eds.). *Therapeutic Revolutions: Pharmaceuticals and Social Change in the Twentieth Century*, Chicago: Chicago University Press.
- Peterson, K. (2014). *Speculative Markets: Drug Circuits and Derivative Life in Nigeria*, Durham, NC: Duke University Press.
- Petryna, A. (2009). *When Experiments Travel: Clinical Trials and the Global Search for Human Subjects*, Princeton: Princeton University Press.
- Petryna, A.; Kleinman, A. (2006). The pharmaceutical nexus, in A. Petryna, A. Lakoff and A. Kleinman (eds.), *Global Pharmaceuticals: Ethics, Markets, and Practices*, Durham, NC: Duke University Press.
- Pilszczek, F.H. (1999). Drug prescribing by physicians in Cambodia, *Pharmacoepidemiology and Drug Safety* 8(5): 339-342.
- Pordié, L. (2015). Hangover free! The social and material trajectories of PartySmart, *Anthropology & Medicine* 22(1): 34-48.
- Pordié, L. (2014). Pervious drugs. Making the pharmaceutical object in techno-ayurveda, *Asian Medicine* 9(1-2): 49-76.
- Pordié, L. (2012). Sortir de l'impasse épistémologique. Nouveaux médicaments et savoirs traditionnels, *Sciences Sociales et Santé* 30(2): 93-103.
- Pordié, L. (1996). *Pharmaceutical Development in Cambodia. Distribution, Accessibility and Quality*, Report, Pharmaciens Sans Frontières.
- Pordié, L.; Gaudillière, J.-P. (2014). The reformulation regime in drug discovery. Revisiting polyherbals and property rights in the ayurvedic industry, *East Asian Science, Technology and Society* 8(1): 57-79.
- Quet, M. (2016): Values in motion: anti-counterfeiting measures and the securitization of pharmaceutical flows, *Journal of Cultural Economy*, DOI: 10.1080/17530350.2016.1258001.
- Quet, M.; Pordié, L.; Bochaton, A.; Chantavanich, S.; Kiatying-Angsulee, N.; Lamy, M.; Vungsiriphisal, P. (2018). Regulation Multiple. Pharmaceutical Trajectories and Modes of Control in the ASEAN, *Science, Technology & Society*: in press.
- Reynolds Whyte, S.; van der Geest, S; Hardon, A. (2002), *Social Lives of Medicines*, Cambridge: Cambridge University Press.
- Smith, F. (2005). Medical geography: therapeutic places, spaces and networks, *Progress in Human Geography* 29(4) : 488-495.
- Street, A. (2016). The hospital and the hospital: Infrastructure, human tissue, labour and the scientific production of relational value, *Social Studies of Science* 46(6): 938-960.
- Sunder Rajan, K. (2017). *Pharmocracy: Value, Politics and Knowledge in Global Medicine*. Durham, NC: Duke University Press.
- Sunder Rajan, K. (2006). *Biocapital: The Constitution of Postgenomic Life*, Durham, NC: Duke University Press.
- Transparency International (2020). *Corruption Perception Index 2019*, <https://www.transparency.org/cpi2019>
- Van der Geest, S., S. Reynolds Whyte and A. Hardon 1996, 'The Anthropology of Pharmaceuticals: A Biographical Approach', *Annual Review of Anthropology*, 25: 173-178.
- West, P. (2005). Translation, value, and space: Theorizing an ethnographic and engaged environmental anthropology, *American Anthropologist* 107(4): 632-642.