

THE ANTHROPOLOGY OF PHARMACEUTICALS: A Biographical Approach

Sjaak van der Geest,¹ Susan Reynolds Whyte,² and Anita Hardon¹

¹Medical Anthropology Unit, University of Amsterdam, Oudezijds Achterburgwal 185, 1012 DK Amsterdam, The Netherlands

²Institute of Anthropology, University of Copenhagen, Frederikholms Kanal 4, 1220 Copenhagen, Denmark

KEY WORDS: medical anthropology, pharmaceuticals, drugs, applied anthropology

ABSTRACT

This review discusses pharmaceuticals as social and cultural phenomena by following their "life cycle" from production, marketing, and prescription to distribution, purchasing, consumption, and finally their efficacy. Each phase has its own particular context, actors, and transactions and is characterized by different sets of values and ideas. The anthropology of pharmaceuticals is relevant to medical anthropology and health policy. It also touches the heart of general anthropology with its long-time interest in the concepts of culture vs nature, symbolization and social transformation, and its more recent concerns with the cultural construction of the body and processes of globalization and localization. The study of transactions and meanings of pharmaceuticals in diverse social settings provides a particularly appropriate empirical base for addressing these new theoretical issues.

Introduction

Throughout human history and across cultures, people have attributed special transformative powers to material substances. A love medicine turns the world upside down in Shakespeare's *A Midsummer Night's Dream*, and in Burgess's *A Clockwork Orange*, the main character is treated with medicine to cure him of his violent behavior. Abu-Lughod (3) recounted a Bedouin legend about a man who took his wife's fertility medicine, became pregnant, and gave birth to

a daughter. Keller (95) reported that women in Zambia have ingenious medicines to prevent their husbands from engaging in extramarital sex, and Sacks (172) described how a medicine awakened patients from a thirty-year lethargy. The Jesuit missionary Alexandre de Rhodes, who visited Vietnam in the first half of the seventeenth century, wrote in his diary: "They have such reverence for holy water....They give it to all the sick to drink, with marvelous results. Every Sunday I was obliged to bless at least 500 jars of this sacred water to satisfy their pious desires" (39a).

By definition medicines are substances that have the capacity to change the condition of a living organism—for better or, in the case of sorcery medicines, for worse. The prototype of medicines are the *materia medica* that alleviate ill health, and the significance of medicines for most people lies in their curative efficacy. What makes medicines so popular as solutions in moments of distress? What gives them the potency to become candidates for "tournaments" in which the central tokens of value are at stake, as Tan (195) suggested, using a term from Appadurai (10)? The secret of their attributed power lies primarily in their concreteness (218). Their "thinginess" provides patients and healers with a means to deal with the problem at hand. Medicines are tangible, usable in a concrete way: They can be swallowed, smeared on the skin, or inserted into orifices—activities that hold the promise of a physical effect. By applying a "thing," we transform the state of dysphoria into something concrete, into some thing to which the patient and others can address their efforts. Medicines thus fit logically into biomedicine and most other medical traditions. Practicing medicine, after all, is the art of making dis-ease concrete.

The cultural (symbolic) logic of medicines was discerned by early anthropologists in so-called primitive societies. They called it magic, fetishism, or animism: the belief in the immanence of forces that people attempt to possess, control, and manipulate to their own advantage. Until recently, however, few anthropologists extended that cultural perspective to pharmaceuticals—the synthesized, manufactured, and commercially distributed therapeutic substances that constitute the hard core of biomedicine. With the exception of a few pioneers (8, 38, 117), anthropologists did not begin systematically to examine pharmaceuticals as social and cultural phenomena until the 1980s. By then it was abundantly clear that biomedicine, and particularly "biomedicines," were genuinely popular and heavily used in many societies of Africa, Asia, and Latin America (57, 74, 210). Moreover, radical critiques of the pharmaceutical invasion of the Third World (23, 29, 63, 125, 139, 182, 183) had caught the attention of some academics. Illich's (83) attack on biomedicine's expropriation of health in Western society sparked critical studies about medicalization and overconsumption of medical services, including pharmaceuticals. It was also in the 1980s that the concept of essential drugs—inex-

pensive and safe medications for the most common diseases—gained attention worldwide, mainly through promotion by the World Health Organization (93, 120). Policymakers as well as anthropologists concerned with the policy implications of their work increasingly attended to the ways that drugs were provided and used in settings of the South.

Thus health-care issues constituted one setting antecedent to the rise of anthropological interest in pharmaceuticals, although in the North the relation between medicines and society became primarily the province of social pharmacy (115, 191, 192). Researchers documented the local realities in which medicines were actually made available and used. They showed the significance of the transaction of medicines through commercial and informal channels and emphasized that most pharmaceuticals, even regulated “prescription-only” drugs, were taken as self-medication, that is, without the supervision of a formally trained health worker. Some researchers examined the often capricious transactions involving pharmaceuticals; others explored the meanings that people attached to Western medicines. Anthropologists emphasized what Kleinman (98) called the “folk” and the “popular” sectors of health care. Only a few researchers focused primarily on the transaction of pharmaceuticals within professional settings (168, 171, 209, 224).

Another setting antecedent to the increased interest in pharmaceuticals laid within anthropology itself. Greater interest in Western culture and products led to greater interest in biomedicine as a cultural phenomenon worthy of study. As the “exotic bias” diminished, more anthropologists from both the North and South undertook fieldwork in their own societies. Capsules, tablets, and hypodermic syringes were no longer taken for granted and ignored by researchers. They could be defamiliarized (denaturalized) and analyzed according to their attributed meanings. It is striking, however, that sociocultural research on pharmaceuticals has been far less common in societies of the North than in those of the South (223). Apparently, the deexoticization of (medical) anthropology is still incomplete.

A renewed interest by anthropologists in material objects (130) cast older Marxist approaches to commodities and fetishism in a new light and provided a bridge between culture and economy (10, 40, 42, 55, 197). The “thinginess” of medicines and their use as commodities suit them extremely well to this theoretical development (15, 109). The new approach to cultural economy fits with the study of processes of globalization and localization. As older paradigms of modernization and development were supplemented by analyses of transnational cultural flows (11, 70), it became evident that political ideals, entertainment, institutional forms, fashions, and commodities both transformed and were transformed by the contexts through which they moved. Biomedicine is one of the best examples of globalization. It is truly cosmopoli-

tan—not Western—medicine (111). Biomedical technology in diverse social settings provides a particularly appropriate empirical base for addressing newer theoretical issues concerning cultural globalization (154).

The Biography of Pharmaceuticals

By following the transactions of pharmaceuticals, one may discern a biographical order in their “social life” (101). First, they are prepared, usually in a technologically advanced setting, and marketed to wholesale suppliers such as ministries of health and private firms, as well as to retailers (hospitals and clinics, pharmacists, storekeepers, and medical practitioners). Next, they are distributed to consumers, either by prescription or direct sale. The prescription is an intermediate phase. It provides the patient only with a piece of paper that eventually leads to purchase of the medicine. After the pharmaceutical has come into the hands of a consumer, it will reach the final stage of its life: Someone will use the medicine with the purpose of restoring, improving, or maintaining his or her health. The way in which a medicine is taken constitutes a crucial moment in its life. “Wrong use” may render its entire life meaningless. Finally, pharmaceuticals have, as it were, a life after death. The fulfillment of their life purpose lies in their effect on the well-being of the person who took them. The pharmaceutical’s efficacy is its ultimate and decisive life stage.

Each life stage is characterized by a specific context and particular actors. In the production and marketing phase, the primary social actors are scientists and businesspeople working for pharmaceutical companies. The prescription phase mainly involves health professionals and their patients in the context of a medical practice. Distribution is carried out mostly by sellers such as pharmacists, storekeepers, drug pedlars, and their customers in a market-type setting. Use occurs mostly in a household setting, away from medical professionals, as does the final phase: efficacy.

Each stage has a “regime of values” (10), expressed in distinctive sets of ideas about medicines. In the production and marketing phase, concepts of scientific research, market commodity, and commercial competition are dominant. Medical practitioners see pharmaceuticals as indispensable in their encounters with the sick. Pharmacists and other sellers regard pharmaceuticals as commodities, while patients and their relatives expect medicines to solve their problems.

Of course, a “biography” of pharmaceuticals is a metaphor. Through manufacturing, trading, prescribing, buying, and consuming, people give these substances a history. As powerful technical devices and cultural symbols (136), medicines acquire a status and force in society. As medical technology, pharmaceuticals are not only products of human culture, but producers of it. As

vehicles of ideology, facilitators of self-care, and perceived sources of efficacy, they direct people's thoughts and actions and influence their social life. The availability of medicines affects how practitioners and patients deal with sickness. They move people into establishing, avoiding, and breaking off social relationships. To say in Lévi-Strauss's well-known words that medicines are "good to think" (and act) with, renders them insufficient justice. Their role in human life extends much farther, for they use people as much as people use them. A biography of pharmaceuticals is an apt metaphor because it puts order in their social and cultural vagaries and casts light on their complexity. Furthermore, we may distinguish five research themes that coincide with the five biographical life stages mentioned above.

Production and Marketing

Social scientists were first drawn to pharmaceuticals by critical studies of dubious practices by the pharmaceutical industry such as bribery, fraud in safety testing, dumping, and misinformation (24, 29, 32, 123, 124, 139, 182–184). These studies set the tone for a rather uneasy, if not hostile, relationship between the industry and anthropologists, who traditionally chose the side of the weaker party. This animosity may have been a reason why anthropologists failed to study the production and marketing of pharmaceuticals as social and cultural phenomena. Additional reasons might have been the reluctance of the industry to allow researchers to observe their practices, as well as the exotic bias of anthropologists. Capturing the manufacturer's point of view, to paraphrase Malinowski, still needs to be put on the agenda of anthropological research.

There are many questions for anthropologists about pharmaceutical production and marketing. What beliefs do laboratory scientists and drug manufacturers hold about health, disease, and medicine? How is their knowledge of pharmaceuticals produced in concrete industrial activities and social relationships? What are their daily routines in the production and marketing of pharmaceuticals? How are claims about safety and efficacy of medicines constructed? How are such claims used to justify registration and marketing of medicines? How are marketing strategies developed for maximum effect on prescribing and use?

One of the few examples of an anthropological (participant observation) study of the production of scientific knowledge is by Latour & Woolgar (108), although the study does not include pharmaceuticals. A recent study by Abraham (2) that does focus on medicines is a rare attempt at opening the black box of industrial production and marketing of new pharmaceuticals as well as state regulation. The study shows how industry presents biased safety data to drug regulatory bodies to register new products and get them on the market. Re-

viewing a number of case studies, the author states that manufacturers were protected by government drug regulators and that the interests of patients in having adequate information were compromised.

It is no coincidence that the little research undertaken on pharmaceutical production and marketing pertains to their more accessible and visible aspects such as production and sales figures (32), advertisements (64, 137, 198), drug information on inserts (153, 182, 183), drug compendia (157), and attempts by political authorities to curb the influence of pharmaceutical companies (93, 105). Nor is it a coincidence that most of these studies were undertaken by nonanthropologists. An exception is a study of advertisements with telling images of the reinterpretation of pharmaceuticals according to local cultures (136). Drug commercials on TV reflect and produce popular perceptions of pharmaceuticals (72, 88, 148, 193, 219).

It is also striking that the sales representatives of the pharmaceutical industry ("reps") have attracted so little attention from anthropologists (exceptions are 113; VR Kamat & M Nichter, unpublished manuscript). Reps are usually only mentioned in passing (54, 145, 233). Production and marketing still constitute the most conspicuous gap in the anthropological study of pharmaceuticals.

Anthropologists' failure to study the pharmaceutical industry does not mean that the industry has failed to study anthropology. While the industry first ignored critiques blaming it for neglecting the social, cultural, and economic conditions in developing countries (124, 125), it now tends to follow another line. Claiming openness to local variations in cultural concepts of health, illness, and medicine, the industry asserts that it supplies what people welcome as useful and effective. In doing so, the industry argues, they are culturally more sensitive than critics who demand that pharmaceutical firms apply the same standards of practice worldwide, thus imposing Western criteria upon non-Western people. The anthropological perspective is congenial to market research. Ironically, pharmaceutical companies delivering products that, from a biomedical perspective, are dubious, useless, or dangerous, can defend their practice thanks to anthropological studies that show that people cherish vitamins, blood tonics, antidiarrhea medicines, and hormonal preparations.

Prescription

Prescribing a medication is much more than meets the eye. Smith (185) in a now classic article lists 27 "latent functions" of the prescription, some of which are discussed below. A prescription has psychological effects, it is a means of communication, it shows power and facilitates social control, it produces income, and it has symbolic (metonymic) significance. We address

five questions about prescribing medicines: Who prescribes? What is being prescribed? Why do prescribers prescribe as they do or what does prescribing mean to them? What does the prescription mean to the client? And what are the consequences of overprescribing?

Not only medical doctors write prescriptions or instruct people on what medicines they should take. In many societies nurses and other health workers perform this role. Sciortino (175) reported that nurses in rural health centers in Java routinely take over most activities that are the responsibility of doctors. This occurs widely where doctors are scarce. Pharmacists, who are supposed to fill doctors' prescriptions, often skip the doctor (or other health worker) and prescribe medicines themselves (68, 88, 91, 116, 132, 150, 199, 232). Although this practice is particularly likely to develop in societies where medical doctors are difficult to reach, pharmacists are also consulted for medical advice in Western societies (177, 223).

Storekeepers and drug peddlers also prescribe medicines (though not in writing), especially in societies with defective health-care systems (49, 81, 107, 178, 210, 215). These medicine sellers are closer to their customers than doctors and pharmacists geographically, financially, and socially. Whyte (229) called them "folk healers" (98) and noted that they treat their customers with more respect than formal health-care professionals and that they adjust their "prescriptions" to the purses of their clients. Medicines may also be purchased by proxy, another advantage. A last category of prescribers are traditional healers, who have integrated Western pharmaceuticals into their practice (30, 145, 233).

The quality of prescribing is often criticized by biomedical observers. The most common critique refers to overprescribing: too many medicines, too many varieties, unnecessary antibiotics and/or injections, too expensive medicines (22, 66, 84, 102, 104, 162, 164, 180, 198, 221)—in all countries, but particularly in the South. Overprescribing can be the result of poor or biased information disseminated to prescribers (198, 234), profit making (97, 114, 125), or the simple fact that it is easier to satisfy patients with drugs than with words (127).

Faulty prescribing raises the question of the rationality of prescribers. That unqualified dispensers prescribe wrongly can be explained by their lack of biomedical knowledge. However, why do trained physicians and pharmacists prescribe in contradiction with their own professional directives? Sachs & Tomson (170, 171) identified several types of "rationality" in medical practice. What from a biomedical perspective appears irrational and objectionable may make good sense for social, cultural, or other reasons.

Innovative work on how physicians prescribe has been done by Haaijer-Ruskamp (67) and Denig (39). In a series of studies, these authors attempted to

develop a model to understand physician prescribing behavior. The studies show that knowledge about biomedical treatment outcomes determines drug choices only in part. Especially in cases that do not seem serious, doctors tend to resort to simplified strategies in which they do not compare different treatment options. Such routines are sometimes learned or copied from others without conscious deliberation.

Prescribing is a social act. It demonstrates the physician's concern (155, 185). Through prescriptions, doctors show their patients that they recognize their complaints and are trying to help them. The concreteness of the prescription paper presages the concreteness of the medicine. Where medication is seen as the essence of medical practice, prescribing is the main thing expected from a physician. A nonprescribing doctor presents a contradiction. Not prescribing, which might be preferable on biomedical grounds, would then be irrational by cultural criteria. Numerous authors noted that doctors attempt to increase their good reputation by prescribing profusely (90). Conversely, where people are more critical of prescribing and may regard it as avoiding the real issue (25, 220), doctors are more parsimonious in prescribing medicines. In both cases, the doctor is complying with patient demands (75, 90). Schwartz et al (174) mentioned patient demands as one of the three main reasons for "nonscientific" prescribing in the United States (The other two are the wish to give a placebo, which is also a form of compliance, and clinical experience).

Prescribing, finally, is as much a matter of the doctor solving his own problems as solving those of the patient (34, 126, 127, 185, 219). The doctor's problems are: how to react satisfactorily to the patient's request, how to conceal his uncertainty about cause and cure of the sickness, and how to dispose of the patient in an acceptable manner. The prescription comes to his rescue, as Pellegrino suggests (155:627):

The medication indicates the doctor's concern; it enables him to communicate with patients with lesser education, different values, or different socioeconomic status; it can forestall lengthy discussion of symptoms and their meaning...it is an effective device for parcelling out the limited time a physician can allot to a patient... Giving a prescription is also a major source of satisfaction to the physician, since it may be the only way he can 'do' something for the patient.

Even when practitioner and patient do not understand each other, the prescribed medicines give them the illusion that they are in agreement about the best therapy (168). The leading role of pharmaceuticals in clinical practice is nowhere more convincing: The available medicines create the possibility of the doctor's most therapeutic act—writing a prescription—and urge him to perform it. Pellegrino (155) called it the doctor's "benediction."

The wholesome effect the prescription has on the doctor—and any other prescriber—is not lost on the patient. With the prescription as a kind of written contract, the healer and the person to be healed unite to undertake a common action. The prescription is an “offshoot” of the doctor, his metonymic representation. Taking along the prescription is like taking along the doctor himself with his knowledge and good advice, his concern, and his access to medication.

The prescription is not yet the medication, but for many it nearly is (61, 107, 155). Samuel Butler wrote in one of his Notebooks: “I read once of a man who was cured of a dangerous illness by eating his doctor’s prescription.” The man’s fortunate mistake parallels a common therapy in Islamic medicine, that of drinking the sacred words of the Koran after their ink has dissolved in water (43).

For the patient, a prescription also functions as a legitimation of sickness. It proves to the environment that he is indeed sick and entitles him to the privileges and roles reserved for the sick. A refusal to give a prescription would cast doubt over the genuineness of the patient’s complaint. In cultures where the prescription of medicines is less well appreciated, a written referral to a medical specialist will have the same effect.

Liberal prescribing may serve a social and cultural logic, but biomedical observers emphasize that it also causes considerable problems. One concern is that it leads to erratic buying of medicines when poor patients are unable to buy all the medicines on the prescription and choose arbitrarily (e.g. the first on the list, the cheapest, the one that happens to be in stock) (96, 180). Another problematic consequence of bad prescribing is that people tend to imitate doctors’ prescriptions in self-medication (71, 148, 194).

Distribution

Anthropologists studying health-care practices in cultures of the South long ignored the widespread distribution of pharmaceuticals. Buying so-called modern drugs in local stores and market booths had already become established practice while anthropologists continued to write exclusively about ritual treatments and medicinal herbs. One of the first to draw attention to the sale of “patent medicines” was Geertz (62) in his study of religion in Java. Geertz included an extensive field note about a man dressed in Western-style clothes selling a medicine in the town square. He claims that the medicine is good for everything, from heart trouble, cough, and stomachaches to insanity. The medicine is used with great success in America and Jakarta. During his talk he shows pictures from *Life* magazine and some glossy medical journals and mentions the name of President Eisenhower. In another early observation, Bleek (21) reported how young people in a rural town of Ghana buy injections,

Nivaquine tablets, laxatives, and various other pharmaceuticals to cause abortion.

The first reaction to the news that Western pharmaceuticals were not different from Coca-Cola in that they were offered for sale everywhere in the world, without professional medical supervision, was concern about their health consequences (e.g. 13, 49, 119, 122). At the same time, anthropologists set out to study their ubiquitous availability as an integral part of changing culture.

Reviewing the work to date we may distinguish (*a*) contextual descriptions of drug selling and more analytical studies that (*b*) contrast and compare private/public and formal/informal distribution, (*c*) view distribution in the light of state policy, and (*d*) discuss commoditization and commercial aspects.

Most descriptions focus on pharmacies (54, 68, 81, 82, 88–91, 99, 100, 116, 132, 142, 161, 198, 199, 219, 232, 233). A common observation is that pharmacy customers do not always need a doctor's prescription to purchase "prescription-only" medicine. Officially, pharmacies are managed by qualified pharmacists, but especially in countries of the South this is often not the case. Trained pharmacists sometimes are put in charge of several pharmacies but cannot be found in any of them. The actual work of dispensing medicines is done by untrained assistants without supervision (81, 90, 91).

As noted above, pharmacy personnel often give advice to customers and act as doctors (54, 68, 100, 116, 132, 161, 225). Pharmacies are mainly found in urban centers. For people who live near them, they are often the first choice of therapeutic action (116, 219). Several authors point out that prescription habits by pharmacy personnel leave much to be desired (198) and that profit motives largely determine their practices (82). Others, however, emphasize their closeness to the people and their concern (91, 116, 219).

The most detailed and informative study of pharmacies is by Kamat (89). He carried out research in 75 pharmacies in Bombay and gave a rich account of their functioning. He described pharmacies as extremely lucrative and versatile business enterprises and discussed some views of pharmacists about their profession. They believe that the professional competence of a pharmacist has lost much of its significance because most medicines are now pre-packed. He also described in detail how customers buy their medicines and how they interact with the pharmacy workers (cf 91).

Another category of medicine distributors is health workers in clinics and hospitals (20, 87, 209, 229) of the South. They usually do not own the medicines they distribute and are thus able to dispense them more freely. They may sell medicines under the counter or "out the back door," and they are likely to treat medicines as gifts to friends and relatives (209). Health workers distribute pharmaceuticals both within the institutions where they work and outside them from their homes and in informal practices (229).

There are a variety of informal and untrained vendors of medicines. Pharmaceuticals are sold in shops that can be either specialized drugstores (85, 99, 145, 149, 152, 212) or general stores (72, 163, 212). Pharmaceuticals are also sold in markets and by itinerant hawkers (52, 53, 158, 159, 212, 215). Increasingly popular places for medicine hawkers are lorry stations, taxi parks, and buses (7, 122). In West Africa, it is now common to see a medicine seller entertaining the passengers in a bus with a mixture of religious preaching and commercial drug selling. The Nigerian novelist Ben Okri gives a hilarious account of this practice in his story "Stars of the New Curfew" (151). Two final categories of drug distributors are traditional healers (16, 30, 145, 233), who demonstrate the dynamic character of tradition and passing tourists (188).

Very few of the above studies are truly ethnographic in the sense that they are "thick descriptions," rich in context and with an emphasis on symbol and cognition. Most attention is given to a few transactions and questions that are relevant from a medical perspective. Which pharmaceuticals are being purchased for what type of sickness? Are prescriptions used? Are customers informed about correct use? How much is being paid? But for a few exceptions (30, 215), the conceptual world of medicine providers is hardly discussed.

The public-vs-private and formal-vs-informal status of drug distribution has received much attention, no doubt because it has policy implications. Several authors have contrasted public and private distribution, pointing out the inefficiency of the public system (58, 79, 214, 222). Some suggested that the drug supply system is likely to fail where economic incentives are missing altogether (209), while others criticized the "commerciogenic" nature of private distribution, which leads to severe inequity in health care (54). At the same time, it is noticed that private and public can only be distinguished and contrasted formally. At an informal level, the two "systems" are tightly intertwined and keep each other alive (214). Some examples of informal practices within the formal system have already been mentioned: health workers clandestinely sell medicines (209, 229) and state-registered pharmacies function as informal drugstores where medicines can be purchased without a prescription and untrained assistants act as prescribing doctors.

Closely connected to the articulation of formal and informal distribution channels is the discussion about the place of medicine distribution in state policy. Several authors explain the large-scale informal and uncontrolled distribution of pharmaceuticals in developing countries as the result of a failing health-care policy. The state's failure is threefold. Inability to make professional health workers (doctors and nurses) accessible to the entire population makes it impossible for many to obtain an official prescription. Continuous drug shortages in state health institutions mean that people cannot get what they regard as the essence of health care. Inadequate wages require health

workers to supplement their incomes, often by informal practices. The failures of the state's policy force people into a self-help culture of medicine and create space for the development of an informal medicine market (9, 107, 120, 189, 213, 228, 229).

The commodification of health and health care through the buying and selling of medicines has given rise to some lively debates in medical anthropology. The most prominent critic is Nichter (146) who, on the basis of research in South and Southeast Asia, remarked that there is a growing tendency to see health as something one can obtain through the consumption of pharmaceuticals. He calls this trend "defective modernization" and rejects it because it impoverishes the concept of health and gives a "false sense of health security" (see also 173, 187). Fifteen years earlier, Ferguson (54) had also criticized the "pharmaceuticalization" of health care.

Other authors have a more optimistic view. Plattner's (156) article on the social character of face-to-face market transactions is seminal. Commercial activities do not necessarily destroy social relationships. Money also creates interaction and confidence between people. Uncertainty about the quality of a product encourages customers to buy from someone who is reliable, and conversely a seller will keep his customers if his products are good. In such a situation, buying implies mutual trust. The seller is accountable to the client while a free health-care system may lead to a loss of accountability.

Arguing from this perspective, some (14, 216) plead for a certain degree of privatization in the distribution of pharmaceuticals. Whyte (SR Whyte, unpublished manuscript) observed that commodification of health care through the sale of medicines is a creative grass-roots response to difficult conditions in Uganda. Local users and providers of drugs are pleased that they can meet their needs when the formal system has failed them. Reeler (163) also takes a positive attitude toward commercialization trends. She regarded "negotiating as a customer" as a form of "empowerment" through which urban people in Thailand are better able to put pressure on health-care providers. She wrote: "The commodification of the popular and the folk sector has turned the patient into a customer who can refuse a treatment or purchase exactly what he wants."

Use of Medicines

The previous stages in the pharmaceutical's biography prepare it for use. Only when it is consumed does the substance become a medicine. "Wrong use" may render the best medicine useless or dangerous. Three topics in the literature on use of pharmaceuticals include self-medication, compliance and noncompliance, and conceptual aspects. Self-medication is a natural, self-evident act. It is by far the most common medical action (1, 5, 36, 37, 56, 59, 60, 71, 72, 98, 106, 116, 119, 131, 138, 142, 146, 181, 190, 212, 223, 228). Its self-evidence

is why it initially received little attention from anthropologists, mainly interested in more spectacular medical practices. It is usually practiced with minor ailments, which, according to a founding father of medical anthropology, “are not important enough to theorize about” (4).

Self-medication is “natural” because it is convenient and economical. In addition, availability makes self-medication easy. Almost everywhere pharmaceuticals have replaced herbal medicines. They are available “around the corner” in local shops and kiosks. Even in small villages people can buy painkillers, broad-spectrum antibiotics, and medicines against malaria, worms, and diarrhea. Studies that have documented drug-use patterns in households systematically reveal that people self-medicate common health problems with a limited range of medicines that are easily accessible in the local health-care context (68, 72, 109a). Treatment strategies in these health problems are fixed. They have become routines that are not easily changed. Many people, moreover, store some medicines at home (72, 208, 212).

Self-medication is “natural” in another sense. Because medicines are the essence of medicine, why visit a doctor or nurse when one can get the “thing” directly? Only when the problem remains should one consult an expert. In the Third World, experts may not be available, so self-medication is imperative.

In the North, self-medication is encouraged in reaction to overdependence on medical services. For consumers, it is a movement to assume greater responsibility over their own health. For the state it is a welcome opportunity to economize on health care (223). It also benefits the pharmaceutical industry (78, 186).

By definition, self-medication is practiced outside the control of medical professionals, usually at home. Not surprisingly, biomedical observers are concerned about the risks of self-medication (e.g. 1, 49, 119). There is only a thin line between self-medication and prescribed medication, and a doctor or nurse can never be sure patients will take medicines exactly as they were instructed. Thus, every medication is to some extent self-medication, unless the health worker administers it (e.g. an injection).

Hundreds of studies have been published about compliance in taking medication. In nearly all of them, compliance is viewed from a medico-centric perspective, and noncompliance—not following professional instructions about medication—is considered a problem. These studies have been undertaken to investigate the causes of noncompliance to improve compliance. Conrad (35) and others (77, 148, 204) have argued, however, that noncompliance needs to be studied from the patient’s point of view. Patients may have good reasons for taking their medicines in a way other than that indicated by the prescriber. Conrad reported that epileptics may follow their own ideas of self-medication to test how long they can stay without medication, to gain

more control over their situation, to escape the stigmatization associated with medication, or for practical reasons.

Rarely is noncompliance the result of patients misunderstanding the doctor's information, but it is the result of patients having different ideas and, in particular, different interests. Compliance, wrote Trostle (202), is an ideology that justifies the physician's authority. Understanding noncompliance requires an anthropological approach to capture the patient's viewpoint. In noncompliance, patients express their rationality vis-à-vis the doctor's. That rationality includes not only medical considerations but also social, political, and economic ones. This applies to mothers in Ecuador (56) as well as to women in the United States who want to control the symptoms of their illness within the constraints of their daily routine of life (80).

In most cases, however, other conceptions of health, illness, and medicine affect the way people take medicines in both Western (26, 61, 75, 76) and, in particular, non-Western societies, where pharmaceuticals are often recast in another knowledge system and used very differently from the way they were intended in the "regime of value" where they were produced (17, 20, 69, 103, 131, 226).

One of the first to draw attention to this phenomenon of cultural reinterpretation was Logan (117), who showed that Guatemalan villagers categorized Western medicines as "hot" or "cold" according to their own illness classification. Acceptance or rejection of a particular medication depended on this classification and not on biomedical knowledge (see also 86, 128). Color is also related to use. Especially in African cultures, illness and healing are often linked to color symbolism (20, 143, 178), and notions of color qualities relevant to traditional medicines may guide preferences for pharmaceuticals.

In some societies, notions of "compatibility" are used to steer drug use. Hardon (73), for example, heard from her informants in Manila that a medicine must fit the person using it (in the local language, the medicine must be *hiyang*). People believe that a drug that is good for one person can be bad for another. When individuals conclude that a medicine is bad they refuse to take it, even if the drug seems medically suitable. For the same reason, they could decide to take a medicine considered "wrong" by the doctor. An interesting variation occurs in Sri Lanka (147). Sinhalese people believe that an effective medicine must not only fit the patient, the therapeutic capacity of the practitioner administering it should also accord with the patient's constitution.

Other ideas that influence people's consumption of pharmaceuticals are concepts of pathological process and etiology. Etkin et al (46), who studied the use of plant medicine among the Hausa in Northern Nigeria, noticed that people view illness as a process. A tenet in their selection of medicines was "the understanding that symptoms of a disease—or even different dis-

eases—develop sequentially, one eventuating from another” (46:921). They therefore used different medicines at different stages of the disease. Each medicine had specific qualities to fight the symptoms at that particular stage. This idea was also applied in their use of Western pharmaceuticals. Their use was stopped as soon as their target symptom had been resolved. In terms of etiology, their conviction that dirt is the dominant cause of sickness, for example, encourages people to use laxatives frequently (143, 179).

Popular concepts in countries of the North affect medicine use too. Vuckovic & Nichter (223) describe two contradictory trends in the way Americans think about pharmaceuticals. There is, on the one hand, the impatience with pain and illness, which results in an attitude of “more is better” and overconsumption. On the other hand, people are increasingly suspicious of medicines and doubt their safety and efficacy. Pharmaceuticals are poison to be avoided (26, 50, 171).

Efficacy

Only after it has “died” can a medicine accomplish its mission. Its final stage is the “hereafter” or “great beyond” when it takes effect. The efficacy of a pharmaceutical is not limited to the medical domain, however. Its power extends far beyond physical and mental well-being. The effects of medication are also social, cultural, psychological, and even metaphysical.

Opinions differ about the source of therapeutic potency in medicines. Biopharmacologists hold that their healing power is an inherent part of their substance, an opinion that is widespread in other medical cultures as well. For many, that innate capacity is the great blessing of pharmaceuticals because it enables people to find a therapy without becoming dependent on others (discussed below). Often it is argued that medicines derive their power from what the healer puts into them. Yoruba practitioners make their medicines effective by singing to them (28), and healers in Burundi claim that it does not make a difference which herbs they use because it is their personal power added to the herbs that makes them work (12).

The idea of added potency may also be applied to pharmaceuticals believed to be more effective if given by a good hand or accompanied by the right words (18, 19, 147).

Anthropologists, balancing between emic and etic, lie between these two poles. They see efficacy as a cultural construction with both biological and social dimensions (cf 44, 195). Efficacy is brought about in a context of belief and expectation and through social communication and interaction. It has a processual nature and is initiated by preparatory activities like prescribing, buying, collecting, and preparing the medicine. Therefore, the therapeutic effect of a medicine cannot be reduced to its chemical substance. Its “total drug effect” (33) depends also on nonchemical attributes of the drug such as its

color, name, and provenance; on properties of the recipient and prescriber; and on the situations in which the medicine is delivered and consumed. The placebo effect—some prefer the term nonspecific effect—is now almost universally accepted as inherent in medicine, responsible for 10–90% of its efficacy (133–135, 160, 167, 206). “Meaning mends” and “metaphors heal,” as Moerman remarked. However, if efficacy is culturally constructed, then so are side effects (148). Etkin (45) noted, moreover, that what is considered a side effect in one culture may be intended in another. The appearance of side effects is often regarded as a sign that the medicine is strong (171).

One attribute of a medicine, its provenance, is particularly interesting with regard to the construction of efficacy. The belief that medicines that come from afar are stronger than native ones is present in many cultures (48, 110, 178, 227). Pharmaceuticals from Switzerland and Sweden are metonymically endowed with the prestige of these countries’ advanced technology (218). This foreign aura is dexterously exploited in drug advertisements (193).

The social efficacy of pharmaceuticals is manifold. Medicines mark people’s identity, as do other material goods (10). Pharmaceuticals affect people as intimately as food and body decorations and seem particularly well designed to shape people’s sense of being (148) and belonging. Reeler (163) noted that Thai labor migrants write for medicines to be sent from home, even though pharmaceuticals are readily available where they are working. Nichter & Nichter (146) reported a similar example in India of people trying to obtain medicines from their home area. In addition, pharmaceuticals serve as ritual objects facilitating transitions from one phase to another, from health to sickness and back (206). That ritual effect is particularly strong in the social handling of sickness in children (31, 169, 200, 201). For many people, medicines mark the passage from being awake to sleep (61).

Medicines can be used to facilitate, mark, and reinforce social relationships. They can be given in friendship or controlled restrictively in order to maintain authority. As noted above, in the communication between a patient and practitioner, or between a patient and his environment, a medicine—even before it is used—can be more convincing and more effective than words in communicating knowledge and emotion (166, 168, 185).

Just as medicines can serve to facilitate, they can also be used to obviate social relations. With their perceived innate healing power, pharmaceuticals can have a liberating effect on people. Purchasing such a powerful object enables sick people to evade obligations and entanglements with significant social others and solve their problems privately (227). For problems that involve shame (e.g. sexually transmitted diseases, tuberculosis, or unwanted pregnancy), such an alternative solution is particularly welcome (21, 148, 218).

The cultural efficacy of pharmaceuticals lies primarily in their capacity to carry meanings. As we indicated above, pharmaceuticals are not only applied after a disease has been diagnosed. They may also play a crucial role in identifying and interpreting illness and thus contribute to its cultural construction. The character and gravity of sickness are often expressed in terms of kind and quantity of medicines (68, 146, 148). Even the concept of risk may be reified as a phenomenon that can be managed through pharmaceuticals (223). Medicines taken by women in the Philippines signal the image of women as weak and feeble (196).

Pharmaceuticals carry many other messages. They are vehicles of ideologies and fashions and are thus convenient means by which globalization runs its course. If industrial goods spread the commodity ethic (40, 130), pharmaceuticals do so par excellence, as they are the commodities most urgently needed and most invasive, especially in countries of the South (146, 148). If health can be bought, then anything must be for sale.

The psychological efficacy of pharmaceuticals was indicated above in the section on Prescription. The concreteness of the medicine fills the patient with confidence that something is being done about his health problem. Likewise, the person who prescribes or dispenses the medicine feels satisfied that he has been able to reassure the patient. Pharmaceuticals free both patients and doctors from their anxieties (34, 126, 155, 185, 219).

Pharmaceuticals may even have metaphysical efficacy. The fact that they work confirms to those who prescribe and consume them that their beliefs about reality are correct. To most, the "miracles" of pharmaceuticals prove that natural science is the right "religion." To others, who have integrated pharmaceuticals into their own explanatory models, those miracles are taken as proofs of the correctness of their model. The therapeutic efficacy of pharmaceuticals establishes belief in beings that have never been seen, like bacteria, and dogmas that are unintelligible, such as theories of infection and immunity.

Conclusion

In closing, we indicate issues for future research in the anthropology of pharmaceuticals and in applied health research, as well as suggest some areas in which pharmaceutical anthropology can contribute to theory building in the discipline as a whole.

Because they are manufactured commodities, pharmaceuticals present problems for research that have been little explored in medical anthropology. The cultures of commercial scientific research and development and of industrial production are ethnographically unknown areas. We also know little about the mass marketing of health products from the perspective of advertisers and distributors. To date, research has focused on the "reinterpretation" of

pharmaceuticals (20, 45) as they are localized. It is well established that the biomedical meaning of drugs is transformed through "indigenization" (46, 69). But the dichotomy between biomedical and local conceptions is a simplification. There are contexts of meaning and regimes of value in factories, advertising companies, and the practices of traveling sales reps as well.

The neglect of these ethnographic research sites may partly be due to the continuing interest of anthropologists in geographically delimited communities and exotic cultures. The fieldwork tradition is more oriented to communities of neighbors than to multinational communities of interest. Nor have the majority of anthropologists who come from societies of the North sufficiently explored the patterns of value and dynamics of meaning construction characteristic of these mass-media consumer cultures.

Pharmaceuticals constitute a perfect opportunity for the study of the relation between symbols and political economy. On one hand, they are a part of the international flow of capital and commerce. On the other, they are symbols of hope and healing and of the promise of advanced technology. They are more thoroughly incorporated than blue jeans and popular music, and they are more desperately sought than Coca-Cola and videos. They allow individuals and peripheral communities to exercise more autonomy in health care but also create dependence on distant markets.

Medical anthropologists have been working in close cooperation with global and local public health officials involved in attempts to regulate and control the distribution of medicines, and in efforts to enhance the safe and effective use of drugs. Although anthropological studies have pointed to public health problems that need to be addressed, they have done little toward solving the problems in culturally appropriate ways. More knowledge is needed about how local self-care regimes are constructed and how they change over time in response to changes in international, national, and local drug distribution and health interventions aimed at making drug-use patterns safer and more effective (27). Such studies can show how people learn about medicines and evaluate their safety and efficacy, how they choose between available health-care options and drug distribution channels, and how these patterns change over time.

As things, pharmaceuticals move easily from one regime of value and knowledge to another. They can be separated from the expertise that developed, produced, and prescribed them. At the same time, consumers often express a desire to learn about their qualities and potentials (147). How is knowledge about drugs actually disseminated and/or constructed? To what extent does it carry over from one context of social life to another? We mentioned the paucity of studies on the worldviews of drug providers. There is also a lack of understanding of the differential distribution of knowledge

among users and of the channels through which information flows in the popular sector. Such research would be relevant to essential drugs and primary health programs that aim at improving the use and distribution of drugs, providing insight into the effects of the existing programs, and offering alternative ways to achieve their aims. It would be especially useful in the design of health education that takes local knowledge and experience as its starting point (5, 14, 41, 116, 118, 140, 141, 146, 207, 216).

Research on pharmaceuticals is central to several areas of theory in anthropology. One of these is the anthropology of the body. Because of their intimate application, pharmaceuticals directly affect our conception and experience of our bodies. Through their concreteness, they help to make dis-ease tangible and manageable, as we have suggested. In the long run, they may facilitate greater sensitivity to symptoms and a lower threshold of discomfort (148).

Pharmaceuticals provide an eminent example of processes of globalization and localization, and they reveal the insufficiencies and paradoxes of some of the models we have for analyzing cultural complexity. Pharmaceuticals and indigenous medicines take on meaning in contrast with one another (146, 190) and thus appear distinctive. At the same time, pharmaceuticals provide a prototype in terms of packaging and marketing for indigenous medicines, so that the difference between them is diminished (6, 112, 205). Pharmaceutical specialists appear who belong neither to the tradition of biomedicine as practiced in formal health institutions nor to the tradition of indigenous medicine. These quacks or charlatans or bush doctors, as they are called by professionals, provide examples of creolization (70, 231) or counterwork (51) in that they creatively rework forms and ideas.

We have used Appadurai's notion of the social life of things and Kopytoff's biographical framework to organize this review of the literature. As commodities, pharmaceuticals have lives and "deaths" far more significant than their shelf lives and expiration dates. Like other commodities, they are subject to enclaving (attempts to restrict their commonality) and diversion (10, 101). However, in certain respects, pharmaceuticals are not common things that move lightly from one meaning to another. In situations of suffering, they have a potential that may well not be realized if they are not attached to a certain kind of knowledge. As special kinds of commodities, pharmaceuticals may contribute to refining theories about the social life of things.

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