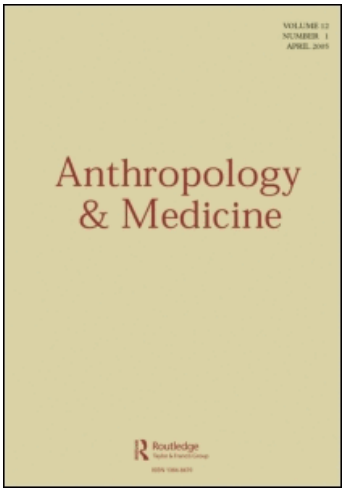

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Special Issue for Anthropology & Medicine

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INTRODUCTION

Special Issue for Anthropology & Medicine

Towards an era of bureaucratically controlled medical compliance?

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The contributions to this special issue of *Anthropology & Medicine* nearly all revolve around the questions of who has autonomy and authority in decision-making, and whose influence matters in attempted enforcements of compliance to prescribed pharmacological treatments.[1]

The field of decision-makers and influencers can be conceived along two dimensions. First, as Longhofer, Floersch and Jenkins have done in another context (2003), as a social grid, in which formal (physician, nurse, case worker, for example) and informal (friend, family, for example) social relations have a part to play in the medication experience and, by extension, patient compliance and non-compliance ('non/compliance' hereafter). This approach usefully expands researcher's horizons to both the subjective experience of medicine takers and the intersubjective relations between them and various treatment providers and influencers.

The actors in this grid or field may also be conceived of as members in a vertical chain of medication delivery, carrying both the message and attempt to promote compliance. Thus conceived, one can more directly mark out what is at stake for each of the actors involved, including the patient/end user. The question of the exercise of power, proximately and at a distance (i.e., by stakeholders such as corporations and public health authorities who are not on the grid) to the patient/end user, can be effectively envisioned using this approach.

The three explicit stakes or investments identified in the papers in connection with treatment compliance are patient well-being, public safety, and profit. As there is an inherent tension between and among these stakes, debate surrounding non/compliance, from theory and measurement to implementation, are perennially mired in questions of ethics, rationality, and culture. A conventional anthropological approach to making sense of these issues might be to ask 'Whose ethics? Whose rationality? Whose culture?'

The co-editors believe that the contributions to this volume may add up to a more synthetic picture from which one might extrapolate principles of the alignment of diverse positions along the delivery chain sequence. This alignment takes the form of an emerging conformity of practices, beliefs and modalities of measurement and analysis in association with the shared view of compliance as a self-evident 'good'

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and non-compliance as a problem, therefore, to be overcome. Solving the problematic of patient autonomy in this benevolent design – particularly in an age when patients are increasingly being conceived of and are (often) conceiving themselves as consumers bearing free choice – may be one of the principal conceptual strategies of this new alignment.

This interpretation of the papers as 'adding up' to an argument about vertical alignments vis-à-vis the conception, discourse and practice of non/compliance may be somewhat projective. Or at least, that entity or logic that the co-editors hold to be the predominant force and inspiration behind the new alignment – global pharmaceutical company marketing – is represented only indirectly in some of the papers that follow. Yet the co-editors of this volume began initially to plan for the current volume with the apprehension that the pharmaceutical industry was revving up to frame non/compliance as a business opportunity (see Applbaum 2009a).

Worldwide pharmaceuticals sales in 2010 are projected at US $825 billion,[2] representing a compound annual growth rate of roughly 10% per year from 1999 onwards.[3] Pharmaceuticals account for 18% of healthcare expenditures worldwide, a percentage that has grown in double digits in recent years. Through much of the 2000s the industry was the world's most profitable. Amid the relative poverty of breakthrough drug discoveries, corporate strategists have turned to treatment non/compliance as a recovery site, a slag heap for lost profits.

Frost and Sullivan (a 'global growth consulting company') – one firm among a cottage industry emerging around the opportunity of non/compliance – published a white paper concerning lost profits in the US market:

> Nonadherence contributes to direct annual costs of $100 billion to the U.S. health care system. Indirect costs exceed $1.5 billion annually in lost patient earnings and $50 billion in lost productivity. The seriousness of this problem has prompted the National Council on Patient Information and Education (NCPIE) to term nonadherence as 'America's other drug problem'.[4]

John Heilman, Senior Commercial Analytics Manager at AstraZeneca and chairperson of the 2008 *Seventh Annual Forum on Patient Compliance, Adherence and Persistency*, quoted IMS Health statistics to warn his colleagues across the industry that only 50–70% of patients ever make it to the pharmacy to fill their prescriptions in the first place, and, of the remainder, 40% fill them only once and 50% discontinue after the first year.[5] A common statistic quoted for the number of deaths caused each year in the US due to medicine non-compliance is 125,000.[6]

The performative efficacy and persistency of initial numerical estimates is worthy of remark. It is not only businesses that have adopted these numbers as a spur to action. A recent *New England Journal of Medicine* editorial entitled 'Thinking outside the pillbox – Medication adherence as a priority for healthcare reform' ratified the above numbers: 'Data show that as many as half of all patients do not adhere faithfully to their prescription medication regimens – and the result is more than $100 billion spent each year on avoidable hospitalizations' (Cutler and Everett 2010: 1).[7] Lastly, the World Health Organization (WHO) has extended attribution of the low compliance numbers quoted above into the developing world, advising: 'Adherence to long-term therapy for chronic illnesses in developed countries averages 50%. In developing countries, the rates are even lower' (WHO 2003).

Independent of the question of whether this renewed attention to compliance will have salutary effects or not, one might point out the shared framing of the problem across business, medical professional and global public health stakeholders that these three vignettes symbolize. On the basis of such evidences and of their reading of the emerging medical anthropological literature concerning pharmaceuticalization (Biehl 2004, 2007; Whitmarsh 2008; Applbaum 2010), the authors speculate whether we are observing the inception of an era of a combined global drive to bureaucratically controlled treatment compliance. The strategic makeup of this drive would draw above all from commercial models for the following two reasons.

First, in most circumstances where one encounters medicines, much of their character can be told from the fact of their highly active status as manufactured commodities – objects produced, marketed, purchased and consumed. It makes sense to view compliance in relation to market forces in general and to pharmaceutical commodity dynamics in particular – the commercial push and the pull that characterizes other goods in the market. The substantially increased marketization of healthcare globally (Panitch and Leys 2010) has foregrounded commercial stakeholders' roles in the circulation of drugs. The metric common to all business discussions of measurement, strategy and tactics regarding non/compliance is not lives saved or improved, but ROI – return on investment. Furthermore, large commercial actors operating on the basis of rationalized planning for ROI maximization are likely the only ones paying direct attention to non/compliance. Tracing the logic of commercial practices most specifically to those entities rather than to any and all traders of drugs in a marketplace (the more common approach in pharmaceutical anthropology) is warranted.

Second, through the diffusion of business models into social sector and nonprofit worlds through (among other conduits) public–private partnerships and sources and paradigms of measurement (see, for example, Lakoff 2006), commercial and public administrative strategies to encourage compliance will increasingly resemble each other.[8] Allied pharmaceutical industry surveillance and state and extra-state audit mechanisms empirically and notionally link compliance as a combined campaign along the long chain from manufacturer to end user.

The incorporation of this chain as a secure channel for the delivery fulfillment of drugs – denoted by the managerial expression 'vertically integrated distribution channel' – is the first dimension of compliance addressed in this introduction. This vertical dimension is being steadily expanded upon through the investments pharmaceutical companies make to improve compliance, sometimes directly and sometimes, as we suggest, through what are only thinly-veiled surrogate state and extra-state actors.

Compliance as product distribution channel delivery fulfillment

Anthropologists working and researching on behalf of health interventions have long confronted the complications associated with medication delivery. The high cost of patent-protected drugs, the insufficiency of research into unprofitable cures and the convoluted logistics of distribution of even generically available drugs predominate among the factors slowing the access in many places to needed treatments and to the difficulty of ensuring adherence to offered therapies. Elsewhere, the massive profits achievable through excessive marketing of medicines have brought about the

hyperconsumption of prescription drugs. Hyperconsumption is common in affluent countries (and most particularly in the United States, where 45% of the world's drugs are consumed), but it is surely not limited to them (for example, Ecks and Basu 2009).[9] The aggressive globalization of pharmaceutical marketing by 'Big Pharma' and the imitation of these techniques by domestic purveyors continue to tip the balance towards hyperconsumption in many locales. Unchecked availability and inducements to consumption of pharmaceuticals is itself a precursor to poor compliance because polypharmacy (when an individual is prescribed several drugs at once) multiplies cost, drug-taking schedule complications, side effects and drug interactions, all of which are associated with poor compliance rates (McCoy 2009).

From a commercial standpoint, pharmaceuticals are unique because the initial decision-maker (physicians and other healthcare providers), the purchaser or payer (often public or private insurers) and the end user may be three separate entities rather than a single one, as in most consumer goods. This fragmentation of consumer function implies a risk of fulfillment failure. Accordingly, drug manufacturers devote extensive managerial attention to controlling the entire distributional chain from the creation of value in research and development (R&D) to demonstration of that value to the various 'co-dependent choice makers' leading to prescription, and lastly to compliance at the user end of the 'value chain' (Applbaum 2009a, 2009b, 2009c). It is the attempt to vertically integrate all the dissimilar links on the chain from R&D to testing, commercialization, marketing, prescribing and ingesting of drugs that is seen to guarantee success of the commercial venture. Pharmaceutical marketing is hardly omnipotent; however, it has emerged as the greatest single at-a-distance influence capable of moving pharmaceuticals and defining their circulation, meanings and uses. This influence is expanding with the commercial reach of a consolidating industry. By design this reach extends beyond the commercial ambit of the drugs themselves, since many more than just those with a commercial interest in purveying the drugs are involved in their dissemination.

The industry shift to focus on 'maintenance therapies' for chronic conditions – managing risk factors rather than diseases per se (Greene 2007; Oldani 2008, 2009) – has meant more emphasis on non/compliance because designated returns on investment lie in the long-term repeat use of the product. In addition, the scaling up of lifestyle drug marketing (e.g., anti-impotence or obesity drugs, but increasingly stimulants and antidepressants – see Lexchin 2001; Applbaum 2006) has similarly underscored the importance of compliance to drug companies because the profits from these drugs are likewise dependent on long-term use often for asymptomatic or subjectively defined conditions. The most profitable entities – the so-called blockbusters – are almost uniformly me-too drugs (replications of existing drugs, with minor variations) in the maintenance and/or lifestyle categories. Meanwhile, many of the new drugs being developed and marketed fare poorly against placebo (Lakoff 2007; Healy 2009; Silberman 2009), reflecting both their marginal medical value and the concurrent need by pharmaceutical companies for more marketing to get doctors to prescribe them and patients to take them.

To serve the industry's increased eagerness surrounding treatment compliance, an ancillary industry of expert consultancies and compliance packaging technicians has come into being. To convey a small sense of the characteristic involvement in this

new field, the biographical sketches of the two co-chairs of the 2010 *Ninth Annual Forum on Compliance, Adherence and Persistency*, to be held in Philadelphia in April 2010, are excerpted:

> *Andrea LaFountain, Founder and CEO, Mind Field Solutions*
> Dr. LaFountain is a Cognitive Psychologist with sixteen years healthcare experience, eight years within pharmaceutical industry. She developed the industry's only patented model predictive of adherence and her research has been described as 'measuring the immeasurable.' She has published some of her adherence work with Dr. Partridge, Harvard Medical School, in the top-tier Journal of Clinical Oncology (Feb., 2008) where the Editors described the research as 'expected to have a substantial and immediate impact on clinical practice.' Her business model is the application of Mind Field Diagnostics™ and Cognitive Architecture™ to significantly impact customer motivation.
>
> *David Baker, Vice President, Commercial Lead, Shire*
> Mr. Baker is responsible for maximization of Shire's existing ADHD portfolio as well as efforts to build Shire's pipeline of ADHD and other CNS products through licensing and acquisition. Most recently, he led Shire's successful effort to establish a co-promotion agreement with GlaxoSmithKline for the promotion of Shire's leading brand, Vyvanse®, for Adult ADHD, and oversaw the company's successful effort to license early stage developmental compounds for ADHD from the NIH. In the past, he has served as global general manager for leading ADHD brands, Vyvanse and Adderall XR®, leading Marketing, R&D, Regulatory and Manufacturing efforts. Prior to that, he served as Vice President of U.S. Marketing for ADHD products. Within the past several years, he has overseen the launch of two new ADHD products for Shire – Vyvanse and Daytrana®. Mr. Baker has an extensive background in diverse therapeutic areas. In addition to his knowledge and experience with ADHD, his therapeutic expertise includes osteoporosis, migraine and hyperlipidemia. He has been directly involved with the marketing of many leading prescription drugs with annual sales in excess of $1 billion, including Mevacor®, Zocor®, Fosamax® and Adderall XR®. He has led efforts to improve persistence and compliance in osteoporosis and ADHD, including overseeing market research projects and the development of consumer and physician specific programs.[10]

These individual's bios (and the brochure they were taken from) could serve as specula into the anatomy of the commercial compliance movement. As in other areas of medical marketing, professional cheerleading for compliance does more than merely serve existing needs; it medicalizes and expands them.

Pharmaceutical companies' adoption of a fast moving consumer goods (FMCG) model for marketing drugs has meant the visible rise of advertisements and other devices that deepen the propensity for people to request, evaluate and refuse medicines from a consumption frame of reference.[11] Company inducements to compliance reflect an expected counter strategy in the same idiom: a complex array of consumer research tools (for example, Mind Field Diagnostics) that fix non/compliance in the world of individual attitude, behavior and decision-making. These are followed up with targeted marketing strategies – education campaigns, loyalty programs, novel packaging and delivery of medicines, for instance – that undertake to solve non-compliance as a form of consumer communication failure.

The industry's growing fixation on non/compliance appears to be centered mainly on affluent markets, where branded drugs are most prevalent and price reimbursements high. As with new product development and marketing in general, drug companies focus on their most profitable businesses. Because firms must grow, however, they have avidly expanded to 'emerging markets' (EMs) – particularly the so-called BRIC countries of Brazil, Russia, India and China, but also Mexico,

Turkey and South Korea, which together make up the EM-7. The steady increase in wealthy and middle class consumers in these markets has brought these countries into focus as growth opportunities for pharmaceutical sales. Here, in a material aside, pharmaceutical interest is also growing because compliance of a different sort is improving, namely, compliance with global trade agreements regarding intellectual property protection and with standardizing trade mechanisms for approving clinical trial data across borders, such as the International Conference on Harmonization (ICH); (see also Petryna 2009).

It is important to note again that WHO has extended attribution of the low compliance numbers quoted above into the developing world. That compliance with vaccines and treatments for tuberculosis and HIV/AIDs, among other vital areas, may be particularly poor in the developing world is a source of genuine concern to all those working in global and public health (Farmer 1997). In contrast with the case of affluent countries where overspending, overprescribing and hyperconsumption are at stake when expressions like 'America's other drug problem' are bandied about, in developing countries the opposite is often true. The same market forces that sustain impoverishment in general in any given place similarly contribute to the poverty of medicines access and compliance there (Janes and Corbett 2009). The direct human costs of poor adherence are compounded by the microbial threat of drug resistance that emerges when a course of treatment is not completed.[12]

In light of these challenges, innovative approaches to improving adherence have been and surely are to be welcomed. It stands that marketing techniques have much to contribute to compliance campaigns in the areas of improving awareness, in behavior and attitude measurement and in medication delivery; these can be seen as salutary uses of business models alongside or in conjunction with health service approaches to improving compliance rates.

We wish to sound a few cautionary notes to the wholesale embracing of business models and partnerships in the pursuit of better compliance in the developing world, however. Private financial investment toward compliance in developing countries will likely be spearheaded by public-private cooperation among governments, nongovernmental organizations (NGOs) and with WHO, in keeping with the hasty growth since the 1980s of global public-private partnerships (GPPPs) (Buse and Walt 2000). Against the dearth of specific studies of outcomes to GPPPs in general and in respect to the nascent field of treatment non/compliance, we might question what costs might arise with the implementation of compliance solutions inspired and promoted by industry. Buse and Walt caution against too hasty an approbation of the efficiencies of GPPPs: 'While such partnerships bring major resources into the international public health arena and have the potential to benefit large populations, they also blur the traditional distinctions between the public and private sector's aims and responsibilities' (Buse and Walt 2000, 2).[13]

The reason for ambivalence to GPPPs in regard to compliance, as Buse and Walt suggest, is that the goals of business and those of public health ultimately do not coincide. The pharmaceutical compliance marketer is a shareholder in the consumer, not a healer. The marketer seeks to understand the non-compliant patient not principally in order to produce a better overall therapy for him, but to secure the company's investment through maximal consumption of the therapeutic product.

Compliance as an object of study

The business interest in medical non/compliance described here was preceded by a proliferation of epidemiological and health service research on non/compliance in the 1970s and 1980s (Greene 2004; Ingersoll and Cohen 2008). From the early 1900s until about the 1970s, treatment non-compliant patients were given various labels by healthcare providers to denote irrationality of one form or another: deviant, careless, incorrigible, irresponsible, non-cooperative and so on (Greene 2004). By the 1960s, the non-compliant patient was being medicalized, appearing in the literature as a 'unique pathological entity' that cut across populations and disease categories. Even as late as the mid-1970s, the medical literature labeled non-compliance 'a very real disease' – a clinical description of a universal condition (Greene 2004, 332, 328).

In 1974, a consensus conference regarding medical non/compliance was organized by two Canadian physician epidemiologists (see Sackett and Haynes 1976 for published papers from that conference) who sought to unify concepts and approaches to non/compliance. A month after the conference, the *Journal of the American Medical Association* (JAMA) picked up the new labels and published an extensive review on the diagnosis and treatment of non-compliance. By 1975 the non/compliant patient was objectified both in clinical practice and as an object of study, with the declaration of 'patient compliance' and 'patient non-compliance' as subject headings in MEDLARS and the *Index Medicus* (Greene 2004, 333).

Soon after, medical anthropologists began initiating studies of their own concerning the effects of the incongruence of how doctors and patients understood or explained diseases. Some of these addressed non/compliance from the patient's point of view, broadening the interpretive toolkit with which to comprehend the medication experience (Kleinman 1980; Trostle, Hauser and Susser 1983; Conrad 1985; Hunt et al. 1989). James Trostle's influential 1988 article, 'Medical compliance as ideology' summed up the problem or obstacle that anthropologists were trying to surmount with their patient-perspective studies. The results of the rapidly growing number of compliance studies were inconclusive, Trostle (1988, 1300) said, because this research 'has defined patient behavior in terms of professional expectations, and has ignored health-related behavior that contradicts the profession's view of its own centrality to healthcare'.

More recent ethnographies have set out to interrogate the medical profession's implicit view of itself by evincing their explanatory models for various diseases and for patient behaviors as regards them. A subset of studies focusing specifically on compliance reveals a pattern similar to that summarized by Greene (2004), in which ethnographers discover how non-compliant 'others' are tarred by doctors or public health actors as irrational, backwards, traditional, or the like (for example, Hunt and Arar 2001; Whitmarsh 2009; Jain and Jadhav 2009).[14] Most of the papers in this volume conform to this new, constructive trend by taking provider perspectives into account alongside those of patients, and by broadening the notion of provider to a wider sphere than just doctors and patients, but to a full complement of care providers from family members all the way up to WHO and pharmaceutical companies.

In the critical research outside of anthropology, one of the movements has been to encourage recognition of the importance of language and its possible effects on the 'therapeutic alliance' between care giver and receiver. Through the influence

of this work, descriptors of non/compliance continue to evolve through new concepts – from compliance to 'adherence' and most recently to 'concordance' (Perkins and Repper 1998). The goal of this literature and research has been to develop a professional lexicon and set of practices that respect patient autonomy and the patient's point of view when evaluating and designing interventions to improve treatment compliance.

The co-editors of this issue persist in using the term non/compliance (as against the now more current non/adherence) in recognition of the fact that, as many of the contributors illustrate, even after the movement to encourage shared decision-making and the like, the patient remains vulnerable and subject to powerful individual and institutional forces outside of their control. The language of adherence and concordance may suggest a more co-participative implementation of compliance goals in practice, but few of the studies here would corroborate that flattering provider self-view. This point could not be brought out more clearly than in Annette Leibing's paper, in which she shows how an unrealistically idealized nurse–patient relationship is embedded in the term adherence itself – 'the caring nurse and the trustful patient.'

The focus on language is but one outcome of the increased study of compliance qua object, and the effect, thereby, of its objectification. Greene (2004) showed how various groups of doctors (e.g., a new generation of epidemiologists), nurses, and pharmacists immediately sought to use their growing expertise on medical non/compliance to expand their research agendas and professional legitimacy. By becoming key players and stakeholders, defining how medical non/compliance should be studied and remedied, these groups became part of medical non/compliance's elaboration and intensification. Thus, a compliance field effect expanded beyond the doctor–patient clinical dyad as different types of healthcare providers took interest in both the study and administration of non/compliance.

Clinical ethnography and the social contexts for compliance discourse

The research contributions in this volume critically assess the issue of non/compliance as it manifests at various junctures along the compliance continuum – the clinic, the home, long-term care institutions, the pharmacy, computer records, hospital filing systems, news media, corporations, NGOs, etc. They reflect and contribute to the advancement in medical anthropology from a prior focus mainly on the doctor–patient relationship towards the analysis of non/compliance as a dynamic, fluid and multi-stake holder set of exchanges that occur within and beyond the clinic.

In his paper, Paul Brodwin draws insights from science studies to describe this growing horizontal complexity as the 'assemblage of compliance'. Brodwin examines a marginal, if not invisible, stakeholder in the compliance chain: the psychiatric case manager. The 'site' is the Assertive Community Treatment movement and the methods employed by case managers to entice severely mentally ill patients to take their medication while trying to live ordinary lives in the community. A material component of the assemblage of compliance is the 'medical cassette', the weekly pillbox with each compartment labeled with one day of the week and filled with medication. The medical cassette literally embodies the bureaucratization of non/compliance, allowing case managers to observe, keep track of, and target patient adherence.

Leibing likewise examines a group of key intermediaries – community nurses – and their roles within the compliance continuum for Alzheimer's treatment. Alzheimer treatment provides a critical window into how patient empowerment movements and shared decision-making can be derailed through the symptomatology of the disease process itself. Clever study design and interviewing techniques of nurses reveals their actual (rather than idealized) attitudes about their charges' compliance behavior; some nurses expressed the view that 'the (Alzheimer's) patient should learn to accept the health professionals' knowledge.' Leibing's study exposes the moral dimensions of Alzheimer patient non/compliance as it seeks a new conceptual space for articulating and improving the care and concern for Alzheimer's patients.

Brodwin and Leibing broaden the horizon of non/compliance studies to case workers and nurses. Longhofer and Floersch, McKinney and Greenfield, and Rouse expand our view of non/compliance by using patient-centered approaches to exploring intersubjective realities, personhood, and family life. All three papers insert the family (or family dynamics) as a key site of inquiry and impact for non/compliance studies.

Jeffrey Longhofer and Jerry Floersch see patient non/compliance rooted in forms of desire. Using narrative data analysis, these researchers show that the desire(s) of non/compliance are coproduced (between patients and their parents) through 'narrative strategies of constant comparison,' where all parties construct narratives of 'life before,' 'life on,' and 'a future life' with medication. Longhofer and Floersch identify specific categories of desire implicitly employed by patients, parents and teachers, namely, 'instrumental' and 'concordant,' that allow, and in fact are necessary, for young, bipolar adolescents 'to [do] the daily work of being medicated.' These personal stories become *personhood stories*. The authors question a system that has stripped the psychiatric symptom of any historical meaning, creating 'for the rest of my life' psychiatric disorders that may allow for both social inclusion, and social compliance, (e.g., school improvement and family normalcy), but paradoxically can create the potential for a lifetime of social exclusion and marginalization.

Kelly McKinney and Brian Greenfield look at a more 'psychiatrically fluid landscape' of social inclusion, where young college students desire to enhance their personalities or self-treat their mild mental impairments with prescription drugs. At 'Prozac campus,' members of 'Generation Rx' (Critser 2005) seek out and find pharmaceutical solutions to psychiatric problems. However, these self-medicating young people are unique in so far as their medical experiences are not organized around pharmaceutical non/compliance. No one is attempting to coax them into taking medication, yet they find themselves heavily medicated. What we discover through these personal narratives are the other actors that exist in their psyche and play both implicit and explicit roles in their pharmaceutical dramas: Parents, friends, the Internet and the drugs themselves act as proxy pharmacists in ones' self-compliance to medication. The sheer willingness of these subjects to open their personal lives to McKinney and Greenfield points to one of their key discoveries: that personal suffering in the pharmaceutical era must occur in biomedical terms. Young people are literally swallowing biomedical (and biopsychiatric) explanations for their life situations and for life itself.

Carolyn Rouse is similarly interested in biomedical explanations, or narratives of care between patients, their parents and doctors, albeit in an entirely different clinical

milieu. In her paper, the patient, although central to the clinical ethnographic drama, remains silent due to the end stages of terminal illness. Rouse therefore examines the narrative exchanges between doctors and parents that underscore how each party uses (and abuses) non/compliance as a default explanation. Non/compliance as a default label leads to a common stereotype that both actors place on one another: patients become 'irrational' and doctors become culturally incompetent. She takes the 'non' in non-compliance seriously in order to understand why doctors and parents refuse treatment options. Rouse reminds us that the overriding assumption in medicine is that *all* medical advice enhances well-being. Her work is a call for healthcare providers and policymakers to take patient resistance to medication (and treatment) seriously. By not doing so, the medical community misses an opportunity to reflect on what may be wrong with the science, the clinic, or even with their approach to wellness. Rouse's main concern (and larger project) is to find solid answers for racial health disparities that avoid old racialized tropes, such as the irrational, non-compliant African American patient. As in the irrational non-compliance literature alluded to earlier, the non-compliant black patient becomes a kind of 'brush-off' label and an everyday way of thinking for doctors that avoids the real issues in American healthcare today: the limits of therapeutic medicine and the need for health care rationing.

All the aforementioned papers engage directly or indirectly the ways in which healthcare workers and patients are impacted by larger structural forces, such as county mental health programs, the pharmaceutical industry, federal governments, professional healthcare organizations, or patient advocacy groups. The remaining contributors have turned the ethnographic lens on to the emerging bureaucracies of medical non/compliance, providing ample evidence that future anthropological work on non/compliance must continue to reveal how global institutions have literally made non/compliance their business, in every sense of the word.

For instance, WHO and the global public health movement described in Ian Harper's paper has made the control of tuberculosis a 'global emergency'. WHO's main concern is stopping the global spread of multi-drug resistant TB as well as emergent strains of Extreme Drug Resistant Tuberculosis (XDRTB). In the 1990s, WHO determined that the Direct Observation of Treatment-Short Course (DOTS) was the best strategy to contain TB worldwide – 'a vertical TB control program.' This inspired new practices of medical compliance that required healthcare workers to observe patients actually taking their antibiotics. This form of compliance control required a coordinated global network of TB management. Harper addresses how all TB patients in Nepal must be re-categorized into types: new, relapse, treatment after failure, default, etc. Gaps that occur with the bureaucratization of non/compliance are made visible and administrators are left with the challenge of how to 'convert a progressive, protean disease to a single mark on a sheet of paper.'

Moreover, the DOTS program, with its central focus on patient management, does little to address the poverty associated with TB or the 'massive social, cultural and economic barriers that nurture the disease.' The DOTS program becomes a case study of drug resistance, pharmaceutical determinism, ethics, and the law. Harper reiterates that compliance is a structural issue, and those 'least likely to comply are those least able to comply.' He describes how bureaucratic inertia threatens to return patients to the pre-antibiotic era of TB management. Family members cannot be trusted to treat/observe loved ones taking their medication and the long course of

therapy (usually two years) has led to isolation and stigma for TB sufferers. Ironically and tragically, the WHO DOTS program of compulsory compliance can create social scenarios that discourage people from being tested for TB (compare Kleinman and Lee 2005).

Michael Oldani's paper documents how another kind of compulsory compliance has emerged in a somewhat unlikely place: primary care clinics in the US. Non/compliance in this case has as much or more to do with keeping doctors in compliance as it does with treatment adherence for patients. In order to keep doctors literally in compliance with hospital record keeping and clinic billing, an incentivized system has taken hold at the everyday level of clinical practice that pays doctors to keep 'the numbers' in order. Primary care doctors, similar to doctors within the National Health Service in Great Britain, are paid a year-end bonus based on several indicators. In this system, patient compliance is important, such as maintaining 'tight control' of diabetics, but has become only one of several 'bonus multipliers'. Oldani stresses how the day-to-day work, psyche and patient exchanges of these doctors has been altered in profound ways while simultaneously creating a system of potential exclusion for non-compliant patients. In this model, bureaucratic and business pressures of non/compliance threaten to further marginalize the 'good' patient. That is, the patient who may feel well and listen to their doctors, but who does not have 'the right numbers' for the incentivized system, leading to a reduction in bonus pay for doctors.

Douglas Glick and Kalman Applbaum also examine medical non/compliance against a set of numbers: TV ratings. In their study of a CNN special report on mental illness, we come to understand how the media helps perpetuate and deepen a narrative of mental illness in which individuals who are non-compliant with their psychiatric medications are to be feared. The episode assembles portraits, clips, and interviews that portray schizophrenic individuals as potentially violent to others, when in reality they are more likely to harm themselves or to be victims of violence. The image of the schizophrenic person off or on medication (i.e., non/compliant) has become the dominant view of them in the pharmaceutical era. Ironically, amid mental health deinstitutionalization in the US, the burden of compliance falls onto the mentally ill person, while the public nurtures overconfidence in the magic bullet solution of pharmaceuticals (which are credited with having made deinstitutionalization possible in the first place). For Glick and Applbaum, CNN becomes a key cultural site where existing suppositions about pharmaceutically non-compliant schizophrenic individuals are reinforced. One of these is that the ideal patient 'rationally' recognizes his insanity, takes his medication and thereby protects society. The integration of compliance discourse in this instance is society-wide, and it is vox populi, represented by CNN, that proposes to act as the enforcement of it.

In conclusion, each of the papers in this special issue of *Anthropology & Medicine* contributes to the intelligence that treatment non/compliance has evolved into a highly analyzed, audited and administered aspect of healthcare. The multiplicity of actors and institutions that have made non/compliance their business may have both convergent and divergent goals that nevertheless share in their contribution to the increased bureaucratization of compliance. Ethnographic research at the sites of patient non/compliance but also among stakeholders at a remove will continue to play a pivotal role in elaborating the ethical dilemmas and assessing the human costs and benefits of the lived experience of non/compliance.

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Notes

1. Many of these of papers were part of an American Anthropological Association panel, entitled 'New Anthropologies of Medical Compliance' (2008 Annual Meeting). The co-editors of this volume would like to thank Stephan Ecks for his commentary and discussion during that panel session.
2. http://www.dailyfinance.com/story/investing/a-slightly-healthier-forecast-for-global-pharmaceutical-sales-in/19189362/
3. Patented ethical drugs account for over 85% of the world pharmaceutical market by sales, if somewhat less by volume, particularly in developing countries (OECD 2008). Due to cost sensitivity everywhere, generics are gaining ground. From a commercial standpoint, however, the growing trade in generics represents less of a deviation from the 'Big Pharma' logic of marketing for three reasons: (1) many generics are themselves branded copycats of Big Pharma drugs (e.g. Ecks and Basu 2009; Lakoff 2006) that are marketed and sold by the same commercial logic employed by the global corporations; (2) some of the best-selling generics are copies of blockbusters that were created in the first instance principally as marketing vehicles rather than innovative medicines; and (3) global pharmaceutical corporations are buying out or joint venturing with generics makers around the world and are installing their way of doing business in the process.
4. http://www.frost.com/prod/servlet/cpo/55342907.pdf [accessed 28 April 2010].
5. *Pharma Marketing News* May 2008, p. 1.
6. http://www.epill.com/statistics.html [accessed 1 April 2010].
7. Nowhere do the authors of the NEJM editorial acknowledge the confounding scientific uncertainty associated with these measurements, nor do they make mention of the existing counter-discourse of pharmaceutical iatrogenesis, or adverse drug reactions (ADRs), which by the same unverifiable number taking is sometimes estimated at 100,000 deaths and 2.2 million hospitalizations per year in the US. The concurrence of medical professional, global public health and corporate objectives is certain to produce effects in the medicine-taking world in the coming years, sometimes, as Joseph Dumit (see afterword to this volume) wistfully reflects, in the service of goals 'quite far from health'.
8. This convergence is much in accord with the general trend in which neoliberal commercialism blends into neoliberal policy.
9. A distinction between 'hyperconsumption' and 'unnecessary and inappropriate use of medicines' might be made to differentiate, at another level, a typical split in factors leading to excessive consumption in affluent vs. poor settings, respectively.
10. http://www.cbinet.com/show_conference.cfm?confCode=PC10116 [accessed 21 March 2010].
11. Direct-to-consumer advertising (DTCA) is legal only in the US and New Zealand. However, as Barbara Mintzes (2006, 0461) has pointed out, 'in many other countries, unbranded disease-oriented advertising (in which no drug names are mentioned, but patients are often advised to 'see your doctor') is increasingly common'.
12. A recent *Health Exchange* editorial summarized the issue: 'Drug resistance is a growing problem. Efforts to combat ill-health caused, for example, by malaria, tuberculosis, HIV and AIDS, are being undermined by drug-resistant forms of the diseases . . . One of the most important things that prescribers and dispensers can do is to take time with each patient to explain how they must take their medicines and to stress the importance of completing their course of treatment. Patient adherence to the prescribed treatment regime is vital, as microbes are more likely to survive and mutate to resistant forms if they are exposed to an insufficient dose of drug therapy.' http://healthexchangenews.com/

2010/03/24/access-to-medicines-now-and-in-the-future-addressing-the-challenge-of-drug-resistance/ [accessed 15 April 2010].

13. With reference to pharmaceutical industry partnerships in Brazil, Biehl (2007, 1099) writes: 'The pharmaceutical industry's capacity to neutralize and redirect any form of counter-reaction to its advantage is indeed remarkable. Just as big pharma has played a key role in setting global trade rules (through TRIPS, for example), it has also helped to shape the international health agenda. The advocates of the neoliberal reforms of the 1990s encouraged the participation of the private sector in resolving social problems. Nevertheless, this discourse of corporate social responsibility did not translate into large-scale partnerships to eradicate disease among the global poor. But it definitively enabled the private sector to enter the decision-making process at institutions of global governance, and from there to defend its interests and vision.'
14. Whitmarsh's study of non/compliance was originally part of the American Anthropological Association panel 'New Anthropologies of Medical Compliance' (2008), but could not be included in this journal volume due to a previous publishing commitment. The co-editors wish to thank Whitmarsh for his input during the development of the panel and this Special Issue.

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