

Medical technologies: flows, frictions and new socialities

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(Received 22 April 2014; final version received 12 May 2014)

While social scientists often highlight the way medical technologies mediate biomedical hegemony, this special issue focuses on the creative and often unexpected ways in which medical technologies are appropriated by diverse actors in homes, clinics and communities. The authors highlight key insights from twelve ethnographic case studies conducted in North and South America, Western Europe, Sub-Saharan Africa and Southeast Asia. The case studies focus on, among other issues, how sperm donors in Denmark, despite being subjugated to medical surveillance, experience the act of donating sperm as liberating; how sex workers in Indonesia turn to psychoactive painkillers to feel confident when approaching clients; why some anorexic patients in the United States resist prescribed antidepressant drugs; and how adolescent sex education workshops in Ecuador are appropriated by mothers to monitor their daughters and shame their 'lying husbands'. Hardon and Moyer conclude that studies of medical technology need to be sensitive to the micro-dynamics of power, the specificities of local markets in which medical technologies generate value, the social and intergenerational relations in which they are embedded, and their intersections with class hierarchies.

Keywords: ethnography; medical anthropology; cultural construction of illness

That new medical technologies circulate globally is a given in today's world in many ways, that is what they are designed to do. While social scientists have emphasized the 'biomedicalization' that accompanies the diffusion of new medical technologies (Dumit 2010, 2012; Clarke et al. 2003), what is perhaps less obvious is that these technologies can discipline and liberate their users at the same time. Analyses that focus on how technologies govern populations and reinforce the hegemony of biomedicine tend to overlook the complex constellations of care, new subject positions, appropriations, and the sometimes unexpected kinds of empowerment that emerge when new technologies are put to use. This special issue presents a series of ethnographic inquiries that elucidate the micro-dynamics of power surrounding medical technologies and the often creative ways in which professionals and non-professionals appropriate technologies for their own ends.

This special issue emerged out of papers presented in panel 10 of the Medical Pluralism, Techniques, Politics, and Institutions conference, organized by the European Association of Social Anthropologists' Medical Anthropology Network and held in Rome in 2011.¹ The panel, entitled 'Mediating medical things: towards a comparative ethnography of new social forms', was inspired by the work of social scientists who had drawn attention to the new 'socialities' (including support groups and virtual communities) emerging out of shared 'disease states' (Rabinow 1996; Rabearisoa and Callon 2004) and the subject positions arising out of the circulation of blockbuster psychoactive pharmaceuticals

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(Martin 2006; Rose 2007). In organizing the panel, the authors were also responding to Susan Whyte's call (2009: 12) to ethnographically examine health identities and subjectivities mediated by technologies, and the uneven seepage of science with its multiple uses and transformations.

The contributions that make up this special issue thus serve to complement the voluminous Foucauldian analysis of healthcare (e.g. Bergschmidt 2004; Samuelsen and Steffen 2004; Mattes 2011) – a body of literature that has focused on the hegemonic nature of biomedical technologies, how governance structures require people to take individual responsibility for their own health, and coerce them into adopting biomedical understandings of their bodies. As numerous scholars have pointed out, most existing analyses have taken western settings as their point of reference, where biomedicine reigns and states are strong (Lock and Nguyen 2010). The contributions gathered here examine the creative appropriations of medical technologies and the frictions² surrounding their use in a wide variety of institutional settings, under a range of economic and political conditions, in both western and non-western settings.

The authors assembled here have pursued ethnographic research on the use of medical technologies in homes, communities and counselling rooms. They address how medical technologies – from pharmaceuticals, contraceptives, and cosmetic surgery to infertility treatments, peer education, and programs to prevent the mother-to-child transmission of HIV – mediate new ways of relating to doctors, fellow patients, families and communities, and evoke new ways of feeling and being in the world. Some of the contributions present the experiences of a few individuals; others report on the findings of elaborate fieldwork. Our aim is not to generalize across the cases but to discover through them new insights on how medical technologies mediate social processes and understandings of selfhood.

In the first contribution, Trudie Gerrits explores how a Dutch fertility clinic known for its patient-centered practices offers treatment to couples. The treatments, involving a series of diagnostic and therapeutic interventions, require the active involvement of patients. Gerrits shows how the information and support provided by clinic staff, the visualization of the process of conception mediated by medical technologies, and open digital patient files serve to cement bonds between doctors and couples, foster trust in medical procedures, and medicalize couples' understandings of their infertility. Although the clinic strives to be transparent about the low success rate of *in vitro* fertilization and to make couples think twice about the risks, Gerrits shows that such patient-centered medicine paradoxically makes them more inclined to adopt a medical gaze and subject their bodies to medical intervention.

In the second contribution, Alice Desclaux shows how antenatal care programs in Senegal provided counselling to HIV-positive pregnant women so that they could make informed choices about infant feeding. As clinics lacked staff, peer counseling was provided by associations for HIV-positive persons, providing new roles for women counselors and better care for HIV-positive mothers. Promoting the use of infant feeding formula was initially difficult, as being a good mother was equated with breastfeeding. Desclaux recounts how the introduction of HIV medicines led to new guidelines based on the principle that only breastfeeding for six months is the best option for children born in resource-poor settings. Antenatal care programs were no longer advised to provide free formula. Women who had been advised to use formula under the previous guidelines, and had come to associate formula feeding with being a modern mother, now resisted the new breastfeeding-only advice and continued to choose formula, which meant they now had to rely on their own resources.

Kageha and Moyer in the third contribution point to the rupture of social support structures following the scaling up of AIDS medicines programs in Africa. They show how support groups proliferated in Nairobi following the implementation of voluntary counseling and testing programs for HIV. Through an elaborate procedure of informed consent, these groups supported individuals in their decisions to be tested for HIV – at a time when effective treatment was not yet available and being found to be HIV-positive was tantamount to a death sentence. The more recent free access to antiretroviral treatment, the authors argue, has led to the medicalization of AIDS care and an emphasis on policing adherence rather than social support. While antiretroviral treatment programs enable people to live with HIV, they have undermined patient empowerment, returning HIV-positive persons to the status of patients whose role is limited to taking their medication on time.

In the fourth contribution, Moyer details how Kenyan HIV-positive health workers in the current AIDS treatment era use mobile phones to facilitate contact with clients in moments of medical, psychological and financial crisis. Mobile phones are used to re-insert patient advocacy and psychosocial care in clinical settings that focus on pharmaceutical treatment. They have become essential tools in the provision of compassionate and empathetic psychosocial care and support to HIV-positive persons in their everyday lives, at a time when governments and donors no longer supply adequate funding to support groups and other social structures for people living with HIV and AIDS.

The three latter case studies point to the insights that can be gained from ethnographic studies that explore the dynamics of change over time. When AIDS medicines were not yet available to the poor in Africa, those diagnosed with HIV organized themselves into support groups, which advocated for access to treatment. Nguyen (2010) labelled this activism ‘therapeutic citizenship’. But now that AIDS medicines are freely available in most African clinics, and governments and donor agencies are less inclined to invest in patient engagement, HIV-positive persons are expected to be ‘therapeutic clients’ of local health services, entering something akin to a contractual relationship with organizations that register one’s information, provide regular services at treatment sites, and have expectations that must be fulfilled (Whyte et al. 2013). But as the case studies show, people living with HIV do not necessarily adopt the passive role (again) assigned to them.

In the fifth contribution, Sebastian Mohr describes the subjectivities that emerge around medical technologies in a very different institutional setting: that of a Danish sperm bank. His ethnography focuses on the experiences of sperm donors who must subject themselves to recurrent medical check-ups and assessments of sperm quality, and abstain from ejaculation for at least 48 hours before delivering samples of their sperm. But despite being subjugated to such medical surveillance, Mohr’s interlocutors experience the act of donating sperm as liberating – it shapes their intimate lives and partnerships, their self-perceptions as moral actors, their understandings of gender relations, and allows them to enact a sense masculinity informed by biomedicine.

The positive sense of self that Mohr’s interlocutors report contrasts with the negative self-images of men in the sixth contribution by Fiona Parrott. Parrott explores how district hospitals in Malawi offer semen analysis as part of their infertility care to couples who fail to conceive. But hospitals cannot offer assisted reproductive technologies to overcome suboptimal sperm quality. The paper describes how men undergoing semen analysis are not prepared for the possibility of male-factor infertility; they fully expect that infertility is caused by their female partners. Parrott describes the devastating social consequences for men when they are diagnosed as infertile, including disruption to their marriages, their relationships with community members, and their sense of personhood as future fathers. These two cases reveal how the gendered subjectivities that emerge in

reproductive clinics are shaped by the nature of the medical technologies and by the social and family roles that men fulfill.

In the seventh contribution, Nelson and Edmonds focus on a European Union-funded education program for adolescent sexual and reproductive health in three cities in Central and South America. The Community-Embedded Reproductive Health Care for Adolescents (CERCA) project makes use of outreach campaigns, sex education workshops in schools, free text-message and internet hotlines, 'adolescent-friendly communication' training for health providers, mobile health clinics and condom dispensaries. The authors note that while the CERCA project emphasizes the goal of 'open parent-teen communication,' communication about sex for adults is not a straightforward transmission of facts about contraception, but entails the navigation of intergenerational conflicts and threats to their children's public reputation. The authors show how participants used the intervention for their own ends, only some of which dovetailed with the project's original public health aims. Some used intervention spaces to shame their 'lying' husbands, to share knowledge that should nevertheless not be 'acted upon,' or to find out who a son or daughter was dating. Some parents actively supported the project's goal of enabling teens to acquire knowledge about contraception and/or sexually transmitted diseases, but also insisted that such knowledge should not be 'used' but 'saved' for later.

In the eighth contribution, Alex Edmonds and Emilia Sanabria show how medical enhancement technologies intersect with class hierarchies. They argue that plastic surgery and sex hormone therapies have become normalized in Brazil's two-tier system of health-care, with elite models of consumption fuelling aspirations among the popular classes. Celebrities use cosmetic surgery to enlarge their breasts, narrow their waists and widen their hips; hormonal implants are used to suppress menstruation, diminish cellulite and preempt weight gain. These modified bodies are advertised in magazines and on TV, alongside advertorials on clinics and doctors. The authors show, perhaps surprisingly, that public sector services also offer aesthetic interventions, including, for example, post-partum *plastica* to 'correct' the vaginas of poor women. But inequities in access to enhancement technologies continue to exist. In the private sector, testosterone is included in hormonal implants to enhance the libido of busy middle-class women, while poor women in public clinics are offered hormonal injections to reduce menstrual flows and enable their work.

Experimentation stands out in the use of hormones in Brazil, where local pharmacists mix different hormones to achieve specific sexual, reproductive and aesthetic ends. Similar experimentation is noted by Anita Hardon and Ilmi Idrus in the ninth contribution, a case study of the use of prescription drugs by young male, female, and male-to-female transgender sex workers in Makassar, Indonesia. Here, experimentation is not in the hands of doctors and pharmacists, but is pursued by the young sex workers themselves. They consume high dosages of a potent painkiller called Somadril to feel happy, confident and less reluctant to engage in sex with clients, while the transgender sex workers use contraceptive pills and injectable hormones to feminize their male bodies and to attract customers. The paper reveals that youths are extremely creative in adjusting dosages and mixing substances, with knowledge of the (mostly positive) 'lived effects' of drugs spreading through collective experimentation and word of mouth.

Edmonds and Sanabria as well as Hardon and Idrus point to the need to understand the stratified market dynamics in which medical technologies are put to use. In (sexual) service economies in Indonesia and Brazil, enhancement technologies allow poor men and women to associate themselves with celebrity lifestyles, enhance their earnings potential and to attract desirable partners. As Edmonds and Sanabria argue, the new technologies are not only used for self-care; they are also used to optimize social relations through work on the body.

Pascale Hancart Petitet, in the tenth contribution, also focuses on experimentation. In this case, the experiment is a formal clinical trial of the teratogenic AIDS drug Efavirenz, contra-indicated for pregnant women. The logic of the clinical trial demands a particular kind of being in the world: the young Cambodian women enrolled in the trial are expected to resist local reproductive norms and avoid pregnancy. Criteria for inclusion included a negative pregnancy test and the signing of a consent form confirming commitment to double contraceptive use. But despite this regime, 23 out of the 236 enrolled women became pregnant during the course of the trial. The author further reports that many of her interlocutors wanted to have children after regaining their health. When they are no longer visibly sick, they have to navigate their own reproductive desires, social expectations that young women in relationships have children, and the medical logic that demands that they avoid pregnancy while taking teratogenic drugs.

Rebecca Lester in the eleventh contribution shows how patients who are being treated for eating disorders exhibit profound ambivalence towards medical technologies, in this case towards prescribed antidepressant drugs. Lester argues that for some anorexic patients, the optimal state of being is not health, but deprivation. For some of her interlocutors, the refusing of medication reflects an existential struggle about how to survive in a world where one's very existence feels irredeemably wrong. The latter two case studies also reveal the agency that women (and men) exert when confronted by hegemonic biomedicine; when technologies do not fit with their sense of selfhood or reproductive desires, they often actively resist the biomedical regime.

The twelfth and final paper in this special issue focuses on a program where medical technologies are not at the forefront of the interventions; the care provided to the homeless in a French city is first and foremost social. In their contribution, Aline Sarradon-Eck, Cyril Farnarier and Takeo David Hymans address the working practices of a mobile mental health outreach team, one that targets homeless people with severe psychiatric disorders considered hard to reach by the public health authorities and medical services. The team's work – where acts of curing and caring are closely tied – reveals the importance of overcoming a polarized vision of *cure* and *care*. The paper departs from much of the literature on the medicalization of social problems by arguing that medicalization is not only a means of social control, but has ethical value as well. In examining the practices of frontline health workers, it aims to show that integrating the methods and theoretical approaches of social work in medical and paramedical practice is necessary to address the problems of homeless people, to enable health professionals to pursue medical cures, and to challenge the shortcomings of public policy.

Taken together, the ethnographic case studies assembled here show that studies of medicalization need to be sensitive to the site and technology-specific micro-dynamics of power, the specificities of local markets in which medical technologies generate value, changes in power dynamics and markets over time, and the social relations in which technologies figure. Our case studies highlight the dynamic nature of local healthcare constellations and markets. In Brazil the public sector, contrary to what we may expect, provides poor people with access to cosmetic surgery. In Indonesia, marginalized young people use prescription drugs acquired over the counter in private pharmacies to boost their confidence within precarious employment. HIV-positive pregnant women buy infant formula in private markets when AIDS care programs stop providing it for free.

Our case studies further point to the importance of family relations. Many men who donate sperm want to share this with their loved ones while men who are diagnosed as infertile often lose their families. Women who regain life in clinical trials with AIDS medicines desire children to fulfil their role in social reproduction, while the ideal of open communication to enhance the reproductive health of young people is appropriated

by adults to reassert their authority and monitor children. Analyses that solely or primarily emphasize how technologies enable self-management risk underestimating the importance of gendered family and inter-generational relations in everyday life.

Overall, our ethnographic studies in diverse healthcare settings highlight the need to incorporate in our analytical frameworks the creative agency of the users of medical technologies, the particularities of local markets and care constellations, class hierarchies, social relations and family dynamics. As biomedical technologies are resisted, reinvented and adopted, they shape and reinforce site-specific constellations of care, social and family relationships, and class and inter-generational structures of power.

Notes

1. Not all papers in this special issue were presented at the conference. Some other authors were invited to augment the number of cases, and further diversify the study settings.
2. See Tsing (2005) who uses the word 'frictions', as a metaphorical image "to remind us that heterogeneous and unequal encounters can lead to new arrangements of culture and power" (Tsing 2005: 6).

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