



Objectification, standardization, and commodification in health care: A conceptual readjustment[☆]

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ARTICLE INFO

Article history:

Available online 21 May 2009

Keywords:

Theory
Critical sociology
Medical practice
Objectification, standardization,
commodification

ABSTRACT

Historically, medical sociologists have used the interrelated concepts of objectification, commodification, and standardization to point to the pathologies of modern medicine, such as the depersonalization of care and the effects of bureaucratic control. More recent work in science studies, economic sociology, and sociology of health and illness, however, has begun to explore how the social processes of objectification, commodification, and standardization produce a wide variety of biomedical achievements. We provide a theoretical synthesis of this emerging body of scholarship centered upon the intended and unintended consequences of objectification, commodification, and standardization to improve health. We then outline a research agenda that would result from a more comprehensive assessment of how these processes manifest themselves in clinical care.

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Social scientists have used the interrelated concepts of objectification, commodification, and standardization in diverse ways to describe the current state of health care. In the most common usage, these terms have been mobilized since the 1960s to expose the hubris of modern medicine: they signal the loss of humanism in medicine, the depersonalization of care, and the replacement of holistic care with bureaucratic control. The meta-critique implied in these concepts questions the ability of the health care infrastructure to maintain and improve health. Instead, health care is viewed primarily as a system of social control charged with iatrogenic effects (Illich, 1976; Waitzkin, 1979). Alternatively, this criticism gives some credibility to health care providers and their science to improve health but singles out the increasing bureaucratization as a source of corruption (McKinlay & Arches, 1985).

More recently, these same three terms have also begun to be used in a more descriptive manner to explain biomedical achievements of health care interventions. In this usage, objectification, commodification, and standardization are intrinsic to the practice of medicine, explaining how new biomedical knowledge and therapeutic interventions are made possible and implemented. Drawing from science studies, the emphasis shifts from an analysis

of social consequences to a study of how diverse elements are transformed in medical practice to generate new biomedical outcomes. Rather than identifying, for example, standardization as a weakness of the health care system, this research examines how standardization makes particular patient–physician interactions, health outcomes, and forms of knowledge possible. A more descriptive conceptualization dovetails with an emerging consensus among health care observers that most of the gains in mortality and morbidity over the second part of the twentieth century are due to health care interventions (e.g., Cutler, 2004).

In this article, we offer a synthesis of this more descriptive way of conceptualizing objectification, commodification, and standardization in order to formulate a research agenda that draws attention to the health consequences of these processes. We follow here the lead of Arthur Stinchcombe's (2001) writings on formality. He argues that social scientists, under the influence of Max Weber, have underestimated the benefits of formalisms, associating abstractions either with fraud or ritual. Weber, according to Stinchcombe, improperly contrasted formal and substantive (or informal) rationality. Instead, Stinchcombe argues that, under certain circumstances, formalisms advance substantive goals much more efficiently than various informal arrangements. He gives the example of architectural blueprints, which he describes as formal mechanisms that allow people from diverse crafts to get the job done, but which do not include every tiny detail needed to construct a building, as much of this information is based in building codes or construction techniques that do not need re-

[☆] We thank Iddo Tavory, Sarah Nettleton, and the reviewers for suggestions to improve an earlier version of this manuscript.

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specification. Moreover, he points to the flexibility of blueprints, noting that if contractors catch mistakes made by architects, they will ignore or improve on the blueprint—an example of the routine blurring between informal tinkering and formal abstractions. Thus, Stinchcombe argues that the binary distinction of formality versus informality is less useful than looking at the process through which aspects of social life become abstracted, and how these formalisms interact with informal processes.

Following Stinchcombe, we trace the social processes of objectification, commodification, and standardization as they unfold in clinical practice as a means of advancing health. We review the intellectual heritage of these concepts and their common use. Next, we elaborate the more descriptive usage to examine the intended and unintended health outcomes of these processes for those touched by them. We focus our discussion with a research agenda of how objectification, commodification, and standardization can be used to study recurring processes underlying contemporary health policy issues.

Objectification

Over its intellectual history, the concept of objectification has oscillated between a more neutral and a critical interpretation. The neutral interpretation can be found in the works of Marx, Simmel, and Berger and Luckmann who held that through objectification people establish their human nature. For Marx, objectification was a necessary process of realizing one's human species. Therefore, "It would make no sense to talk of overcoming objectification since this is the constitutive activity of human beings: it is the activity that marks them out as human beings, that constitutes their species-essence" (Gaukroger, 1986, p. 304). Instead, in Marxist theory, it is alienation that needs to be overcome. Alienation occurs when labor gets bought and sold in an exchange economy with the laborer losing control over his or her labor. Then, according to Marx, "the worker sinks to the level of a commodity and becomes indeed the most wretched of commodities" (Marx, 1964, p. 106). Objectification refers to how people apprehend the world they produce; it is a distinguishing characteristic of humanity to appropriate nature. Simmel defined objectification of the mind as the means by which people take possession of the world around them in words, works, organizations, and tradition (Simmel, 1990 [1900], p. 449). Berger and Luckmann, drawing from the work of Alfred Schutz, posited that human's capacity to objectify makes everyday life possible. Objectification stands for the ability to recognize human products as elements of a common world. It is part of a dialectic process by which individuals internalize meanings and then express them in ways accessible to others (Berger & Luckmann, 1966).

Where Marx, Simmel, and Berger and Luckmann saw objectification as a distinguishing condition of humanity, a large proportion of contemporary scholarship on objectification follows a Foucauldian interpretation. In various works, Foucault proposed that the new institutions and scientific disciplines of modernity are characterized by an objectification of bodies and human subjects (Foucault, 1973, 1978). Foucault discussed how modes of inquiry aspiring to become fully-fledged scientific disciplines turned to humans as both subjects and objects of knowledge. Institutions such as the clinic, prison, and mental health system have further objectified people as objects for research and disciplinary practices, leading to a normalization of bodies and subjectivities. Finally, Foucault drew attention to self-objectification, the many ways in which human beings achieved a sense of themselves as subjects, especially sexual subjects.

The critical post-structuralist interpretation of objectification found a firm foothold in social science writings of health and medicine. Here, objectification usually refers to the transformation

of people into objects of medical manipulation. Objectification in medicine denotes the primacy of the body or bodily states and measures over any other subjectivity due to technological manipulations. As cells, tissues, organs, bodies, and groups constitute each other in functional ways, so too can objectification jump levels of anatomy, organs, physiologies, even socialities (Sharp, 1995). Objectification generally signifies dehumanization because it involves a professional neutralization of (patient) agency, an erasure of authenticity, an alienation of identities, and a silencing or even displacement of the self and the social world. Objectification is an indictment of medicine's commitment to the mechanistic Cartesian mind-body split, a tendency to transform the social into the biological (Scheper-Hughes & Lock, 1987).

This humanist critique frames objectification from the perspective of an outside observer speaking on behalf of patients, but when we look at objectification from the viewpoint of insiders obtaining medical goals, the seemingly obvious alliance between analytical observer and patient becomes problematic. Thompson has undermined the opposition between agency and objectification in infertility medicine (Thompson, 2005, chap. 6). She argues that the humanist social science critique sees patients undergoing fertility treatments objectified in two opposing ways: a woman is either helpless and saved by infertility technologies or victimized by them. If a woman is able to become pregnant with the assistance of medical interventions, credit accrues to the technology and the infertility specialists. If she is viewed as victimized, she is portrayed as conforming to the norm of motherhood at all costs. Against the image of the objectified patient that erases agency regardless of the outcome of the procedure, Thompson suggests that women actively participate in their own objectification. In fact, depending on how close they are to becoming pregnant, women may desire more, not less, objectification. Drawing on observations in an infertility clinic and interview data, Thompson notes that what a woman considers an instance of objectification in one procedure when she does not get pregnant may be evaluated differently when she does get pregnant. Such a shift in interpretation signals not a contradiction but a movement in the context of her long-range self, in her ultimate aim of getting pregnant.

Viewed from the perspective of an outside observer, women in infertility clinics are objectified multiple times over. Infertility staff operationalize them as body parts through pelvic exams, ultrasounds, laboratory tests, and other procedures. They are naturalized as faulty reproductive processes throughout the intervention process. They are clustered in diagnostic infertility problem categories typical of generic patients. Yet these forms of objectification do not necessarily lead to the loss of social roles, individuality, autonomy or authenticity if the woman desiring to become a mother indeed becomes pregnant. In the midst of procedures, women may exercise agency in their active participation in each of these forms of objectification. When the treatments fail and the woman still desires pregnancy, then the objectification may indeed be experienced as alienating, fragmenting, or manipulating because of an unfulfilled promise.

Thompson draws our attention to the purpose of objectification. She notes that the same procedures can be experienced as objectifying or not in light of broader life goals. In medicine, such a purposeful orientation makes sense. For a terminal patient, a last ditch round of chemotherapy may be worthwhile in light of several months of life. If the techniques fail, this same intervention may have "corrupted" the dying process (Moller, 2000). The dehumanization that critics deplore in contemporary medicine is not an isolated process but is itself a stage in a broader therapeutic process aimed at restoring health, improving the quality of life, gaining fertility, enhancing performance, or palliating suffering.

Thompson's argument may be further developed by looking at what objectification does for the aims of health care providers. An implicit assumption in the humanist social science critique is that health care providers deliberately objectify, or that they are forced to objectify, patients by broader technological and social forces. What, however, are the health effects of objectification from a clinician's perspective? Here, a detour into science studies is helpful. In his account of a field expedition in Brazil, Latour follows soil and plant scientists to figure out whether a savannah is advancing on a forest or the other way around (Latour, 1999). During the expedition, the scientists gather plant and soil samples to transport to their laboratories. During transportation of the samples the totality of the biotope with its humidity, smells, and sounds of wailing howler monkeys has been lost, but the scientists gain the ability to sort the samples into patterns, comparing plants of this expedition with those of three years ago, substituting one sample for another, and so forth. As Latour summarizes, "In losing the forest, we win knowledge of it" (Latour, 1999, p. 38). This knowledge is not ready made but needs to be drawn out by allowing phenomena to manifest themselves. Reduction, then, simultaneously leads to amplification of knowledge. The scientists forfeit resemblance but are compensated with statistical associations between key variables. Knowledge circulates, according to Latour, along reversible chains of transformations.

From the perspective of health care providers, objectification may similarly be viewed as purposeful—a kind of abstraction that leads somewhere. In forensic medicine, pathologists aim to explain why and how someone died. Sociologists analyzing death investigations have not been impressed with statements such as "atherosclerotic cardiac disease" as a definitive cause of death on a death certificate. They compare the postmortem investigation to the rich mortuary practices among the Azande and inhabitants of the Marshall Islands and find the Western model wanting (Prior, 1989; Seale, 1998). If, instead, one follows a corpse from the messy, confusing death scene to the moment the pathologist writes a cause of death on the death certificate, we find a process of transformations, reductions, and amplifications not unlike that observed by Bruno Latour in his Brazilian field expedition. Over the course of the death investigation, a corpse found in suspicious circumstances becomes forensic evidence when a scene investigator photographs, tags, bags, and removes the body from the scene (Timmermans, 2006, chap. 1). The removal from the scene renders entire aspects of social life irrelevant for the search of the cause of death, but this loss is offset by the specific value of the corpse for forensic science and law enforcement. When during the autopsy the pathologist holds the deceased's heart and makes small transversal incisions that reveal occlusions in the coronary arteries, an official cause of death may be found. The leap from physical matter to abstraction is minimized because the death investigative process has been closing the gap all along. "The obvious step from coronary obstruction to cause of death has required having the authority to remove a corpse from its death scene, entering in several logbooks and records, following standardized autopsy procedures ..., noticing the calcified circles, and applying a notion of causality that singles out a pathological factor" (Timmermans, 2006, p. 57). The knowledge gained through the various transformations of the body constitutes an official explanation of the difference between life and death.

Although social scientists have faulted forensic pathologists for decontextualizing death, pathologists actually take great pains not to work in a socially decontextualized fashion. Their findings have to make sense in the contexts of forensic pathology, law enforcement, public health, and government administration, each with multiple and occasionally contradictory priorities. They may lose their credibility and jobs if procedures are not followed or findings

are inconsistent with forensic evidence. The objectification pathologists engage in may also result in specific social identities, for example, when they note that ethanol levels contributed to a death or when they classify a death as a suicide. These social attributions only make sense as local forensic achievements. The power to identify does not simply reside in the pathologist; the pathologist and forensic office are links in a chain of work, technologies, professional relationships, and bodies that mediate knowledge about death. There is thus a crucial difference between holistic social identification and the fragmented social identities relevant for pathologists. Forensic experts are only interested in social identities in so far as they pertain to the cause of death, and the identities they distinguish are asserted with administratively binding authority. Ultimately, however, such knowledge becomes the official truth about death.

Health care providers (and their patients) undoubtedly objectify, but, as Marx, Simmel, Berger and Luckmann suggested, objectification may be closer to an inevitable way of getting things done in medicine than humanistic critics imply. This critique focuses only on one set of consequences from a distant social scientific perspective, but objectification produces both iatrogenesis and successful treatments. Whether objectification becomes alienating depends on the meaning of the interactions for the various people involved and the long-term goal of health interventions. Paradoxically, objectification in health care leads often to a sense of authenticity, singularity, and even social identity.

Commodification

Like objectification, the concept of commodification has a Marxist pedigree, one that is usually invoked to condemn market expansion into realms where critics believe it should not be, such as the family or the human body. Marx's (1936) intervention into nineteenth century debates drew attention to what gave commodities their value, namely human labor. To arrive at this conclusion, he first notes that each commodity is a product of human labor that has a use value (material goods which are useful to human beings) and an exchange value (which makes it exchangeable with other commodities). The use value is quantified in "socially necessary labor-time", and it is related to other commodities by the amount of labor-time necessary for the production of each. Just as commodities have two aspects, human labor has a dual character: qualitative and quantitative. There must be qualitatively different commodities (everyone cannot be exchanging coats for coats), and these different commodities are exchangeable in different quantities. This analysis grows out of Marx's disagreements with economists, who suggested that it was goods themselves that contain exchange value, which he dismissed as the fetishism of commodities, because it does not take into account the social relations contained in the commodity form. He writes, "Commodities possess an objective character as values only in so far as they are all expressions of an identical social substance, human labor, that their objective character as values is therefore purely social" (Marx, 1936, p. 139).

Building on Marx's analysis, sociologists and anthropologists have discussed how it is not only the objects themselves that contain social relationships but that the process of turning objects into commodities is fundamentally a social process (Appadurai, 1986). To make these claims, most scholars assume a binary model in which economic and social spheres are separate and, moreover, should be kept that way, lest economic concerns invade and degrade social relationships and vice versa (Polanyi, 1957 [1944]; Titmuss, 1971). However, an alternative perspective emerging from economic sociology in the past several decades suggests that the economic and the social are not separate spheres but are constantly

co-mingling. Instead of viewing commodification as the triumph of the economic sphere over the social sphere, Viviana Zelizer concludes from her historical studies of life insurance (1979) and the pricing of children (1985) that “the process of rationalization and commodification of the world has its limits, as the market is transformed by social, moral, and sacred values” (1988, p. 631). In other words, because there is no bright line between economic and social, commodification is a social process that will be shaped by social values. As Stinchcombe notes of formalisms, these values may produce outcomes that are seen as less than desirable, but the culprit is not commodification in and of itself, but the way that commodification happens.

Given American reliance on market systems to organize and deliver the good of medical care, medical sociologists have long been interested in analyzing commodification. An early contributor to the field, Talcott Parsons (1951) took special care to remove physicians from the realm of everyday commerce, categorizing them as professionals who operated with institutional constraints on pecuniary motivations. Subsequent research about the health care sector of the US economy focused on the changing status of physicians and their commodified services (e.g., Freidson, 1970), the role of philanthropists and insurance companies (e.g., Brown, 1979), the rise of for-profit hospitals (e.g., Gray, 1996), and the influence of technology and pharmaceutical firms on the content and delivery of medical care (e.g., Waitzkin, 1979). Present in many of these studies is the underlying assumption that economic and social forces belong to separate spheres; money and markets are assumed to have a corrosive influence on medical practice, turning patients and their ills into dollar signs, and leading to further dehumanization of patients and corruption of medical practitioners.

To correct what he saw as the simplifications of prior studies, Donald Light (1993) adapted Montesquieu’s theory of countervailing powers to the health care sector. This allowed for a pluralist and dynamic view of competing demands for power between the medical profession, patients, government, and corporate purchasers. When one power, like the medical profession, is dominant, other powers, like corporations or the government, will act to redress the power imbalance, resulting in a situation in which “capitalism comes face to face with itself” (Light, 1993, p. 196). But even this model leaves intact the idea of separate spheres, along with its assumptions about the negative consequences of commodification, because these powers are conceptualized as interdependent but distinct.

Research conducted within the separate spheres perspective tends to result in different conclusions than research shaped by a Zelizerian perspective. To illustrate, we look closely at one example of commodification, that of markets in human goods (e.g., organs, tissues, blood, eggs, and sperm), which exist to supply the medical profession and patients with bodily products that sustain or create life. These markets are among the most contentious examples of commodification (Radin, 2001), and medical sociologists and anthropologists have deplored the emergence of markets in these goods. For example, Leslie Sharp (2000) follows Appadurai in tracing the social life of an organ, discussing the meaning it holds for different people. For the deceased’s kin, it is a part of their family that lives on; for the recipients, it is a lifesaving gift; for the doctors, it is a valuable commodity that should not be “wasted” on underserving recipients. But her disapproval is clear when she notes, “Science and medical practice rapidly objectify nature, breaking down bodies – literally through surgical transformation, or metaphorically through language and daily practice – into increasingly atomized fragments. Myriad forms of objectification rapidly displace the self, exposing the human body to the world of commerce” (Sharp, 2000, p. 314). Here, the human body is

understood to have existed whole and separate from the market, until being “exposed” and thus defiled, by science and medicine.

Similarly, Nancy Scheper-Hughes (2001) argues forcefully against gray markets in human organs, especially in third world countries where, she argues, the bodies of the poor are being “harvested” to provide for the bodies of the rich. She takes special aim at the altruistic rhetoric swirling in these markets, as in talk of organ “donation” and “giving the gift of life”. Instead, she employs “a broad concept of commodification, encompassing all capitalized economic relations between humans in which human bodies are the token of economic exchanges that are often masked by something else – love, altruism, pleasure, kindness” (Scheper-Hughes, 2001, p. 2). Like Marx, she contends that the economic exchange is fundamental, revealing the assumption that commodities and gifts are essentially different things that belong in separate spheres.

In contrast, Kieran Healy (2006) follows Zelizer to argue that such clear-cut distinctions between the economic and social, between commodities and gifts, do not accurately describe the social world. He finds that although individual donors are not paid, there is an extensive secondary market in blood and organs. These bodily goods are procured and distributed by large-scale bureaucracies, which employ staff who are careful to frame donation as a gift. Instead of dismissing altruistic rhetoric as window-dressing, as Scheper-Hughes does, Healy analyzes how such rhetoric shapes the social interaction between donors, distributors, and purchasers. In one telling example, he compares how voluntary blood banks and for-profit plasma companies responded to the emerging risk of HIV in the early 1980s. Blood bank staff, who characterized blood as a gift, resisted new screening measures for fear of alienating their loyal donors, thereby endangering the blood supply. Plasma companies, who perceived plasma as a commodity, had little compunction about jettisoning paid providers, but responded to financial incentives to keep older (and contaminated) batches of plasma on the market. Healy construes this episode as a natural experiment of Richard Titmuss’ (1971) anti-commodification argument that relying on altruism produces safer blood and is morally preferable to for-profit systems. In decoupling the type of exchange from its effects, Healy successfully undermines normative assumptions about the evils of the marketplace and the benefits of gift exchange by showing the failures of both to protect the blood supply. He concludes, “The idea that markets inevitably corrupt is not tenable precisely *because* they are embedded within social relations, cultural categories, and institutional routines” (Healy, 2006, p. 120, emphasis in original).

Instead of relying on abstract assumptions about separate spheres, medical sociologists who analyze how the interaction of economic, cultural, and structural factors shapes exchange can ask new empirical and theoretical questions about commodification and its effects. In some cases, the interplay between these factors will replicate particular social inequalities while overturning others. For example, in the medical market in genetic material, women donating eggs are more highly valued than men donating sperm, not only because of biological sex differences but also because of the close connection between women’s reproductive bodies and cultural norms of caring motherhood (Almeling, 2007, p. 336). In the context of gamete donation, then, women benefit economically from gendered stereotypes of motherhood that in other contexts, such as the labor market, result in disadvantage (Correll, Benard, & Paik, 2007).

There is no question that commodification—of human bodies, health care, or medical products—results in disparities of access and quality, and it remains critically important to document and examine corruption, exploitation, and the pursuit of profit without regard for therapeutic efficacy. But it is also possible that commodification in the health care sector might benefit patients by bringing new products to

market, legitimizing diseases, and raising awareness of treatment options. While medical sociologists have overwhelmingly focused on the problematic aspects of commodification, especially in the diffusion of new medical technologies or the pharmaceutical industry, it is important to look closely at the multiple effects of commodification in practice. Variation in the social processes of commodification means that sociologists cannot assume that there is one paradigmatic version of all medicalized commodification, and we should remain analytically open to the possibility of improvements due to the commodification of health care.

Standardization

The notion that predictability, accountability, and objectivity will follow standardization belongs to the enlightenment master narratives promising progress through increased rationality. Following Marxist historic materialistic thinking about the tremendous expansion of production via technological change during late capitalism, standardization invokes the mirage of Fordism, Taylorism, and the excesses of the American way of life. In *The McDonaldization of Society*, Ritzer (2000) argues that global companies such as McDonalds rest on rational qualities such as efficiency, calculability, predictability, and control through nonhuman technology which in turn spawn irrational consequences. These irrationalities include bland homogeneity, deskilling, increasing disenchantment, health and environmental risks, and dehumanization for both workers and clients.

Standardization is a topic where sociologists of health and illness—often in dialogue with the science studies literature—have largely avoided a primarily critical conceptualization focusing on the loss of identity and social power, but we can still find deep concern about what an externally enforced standardization may mean for the power of the medical profession. Thus, Hafferty and Light observed how third parties increasingly have been pressuring clinicians to provide standardized procedures by linking practice guidelines to performance indicators and financial incentives (Hafferty & Light, 1995). This indication of a growing bureaucratization signals a move to hold health care providers financially accountable for the services they provide (Light, 2000) and may lead the profession on a path towards mindless “cookbook medicine”. Here, standardization is viewed as a disciplinary mechanism in the tug-of-war between countervailing powers in the health care market. Others have linked standardization directly to dehumanization of care (Frankford, 1994).

Most social scientific scholarship on standardization, however, shows that the politics of standardization are ubiquitous, diverse, and ambiguous. Rather than presuming that standards automatically result in standardization, this scholarship highlights how standards transform work practices, often in counterintuitive ways. Timmermans and Berg's (2003) distinction between procedural standards—standards on how to do things—from terminological standards, design standards, and outcome or performance standards, points to the pervasiveness and diversity of standards in every aspect of life. Bowker and Star have noted that standardization is often an attractive solution to stabilize variability, but “we know from a long and gory history of attempts to standardize information systems that standards do not remain standard for very long, and that one person's standard is another's confusion and mess” (Bowker & Star, 1999, p. 293). Instead, Bowker and Star draw attention to the work needed to standardize and to the categories enhanced or excluded through standardization. They note that standards are necessary to make things and people coordinate over distances but require articulation work to keep things standardized (see also Epstein, 2007; Latour, 1987). Disorder or variability also has a tendency to creep back into standards to

undermine homogenizing tendencies when standards proliferate or much local adaptation is needed to keep the standards functioning (Berg, 1997). In spite of these troubles, standards often sink into a taken for granted infrastructure of everyday life (Bowker & Star, 1999).

Standards, rather than stable and homogeneous, are deeply political and dynamic entities that transform the ways people work and live together in a socio-material world (Timmermans & Berg, 1997). In the field of health care, a hotbed of standardization has been the evidence-based medicine (EBM) movement (Lambert, 2006; Mykhalovskiy & Weir, 2004). EBM generally denotes the use of standardized clinical practice guidelines based on the best available scientific evidence to inform medical decision-making and encourage more effective care (Cochrane, 1972; Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). EBM undoubtedly has been a great boost for medical research and drug development, but its actual effects on clinical decision-making are considered disappointing. A meta-review of physicians' adherence to standards estimates that only in 50% of the cases clinicians follow clinical practice guidelines endorsed by national and professional medical organizations (McGlynn et al., 2003). Attention has been focused on strengthening the implementation of standards (Grimshaw et al., 2001), but even with extensive institutional resources, computer support, and financial incentives, adherence remains spotty. Clinicians do not seem to follow their own guidelines.

How can we make sense of this implementation gap of evidence-based standardization? By design, clinical practice guidelines contain many characteristics of good formalisms (Stinchcombe, 2001). They usually are aimed at answering a specific clinical question (e.g., is fetal monitoring warranted in an uncomplicated pregnancy?), they offer transparent recommendations grounded in the available scientific literature, and they often contain mechanisms for revision or replacement as new evidence becomes available. The implementation problem occurs when we situate the clinical practice guidelines in the settings where they are supposed to be followed. A first problem is communicability. Creators of clinical practice guidelines rely on passive dissemination (Shojania & Grimshaw, 2005): most guidelines are simply published in journals or in databases, in the belief that clinicians will pick them up. Clinicians, however, are not only overwhelmed by the daily torrent of published clinical trials and journal articles but also with the ever-growing flow of guidelines. A second major problem is that a great majority of guidelines conclude that insufficient evidence exists for a strong recommendation. Either the evidence is lacking altogether or it does not meet the gold standard of the randomized clinical trial (Lambert, 2006). Those guidelines expose the gaps in medical knowledge rather than provide clear recommendations.

Even if nationally authoritative protocols are available and if clinicians are familiar with those protocols, the key issue is whether the clinician decides that the guideline applies to their patient. There are both methodological and professional issues that may interfere: protocols are based on probability effects in populations and the clinician has to consider whether the patient fulfills the risk profile of the study. Implementation is further confounded by comorbidity, socio-economic considerations, and patient wishes. Second, the clinicians need to actively submit their personal clinical judgment to the learned position of experts (Timmermans & Berg, 1997). Several qualitative studies of clinicians reflecting on how they implement scientific evidence have shown that, at best, published scientific evidence is one of many elements taken into consideration during decisions. In studies of clinician's decision-making, Dopson et al. observed how evidence-based medicine was still filtered through peer recommendations (rather than replacing

peer opinion), how clinicians used EBM strategically to resist or implement changes they already favored, and how EBM lost credibility when it was associated with cost-control measures (Dopson, Locock, Gabbay, Ferlie, & Fitzgerald, 2003). Timmermans and Angell found that residents in pediatrics were in favor of evidence-based medicine, but their understanding of it varied tremendously (Timmermans & Angell, 2001). Armstrong showed that when general practitioners became aware of a literature on SSRIs to treat depression, they did not take this literature at face value but engaged in their own “clinical trials” on their patients to not only determine efficacy but which kind of patients the drug would work for (Armstrong, 2002). Evidence-based medicine thus has a tenuous hold on clinical practice: its usage reflects the give and take between formalisms and informal practices to make these standardized tools fit the situation at hand (Stinchcombe, 2001).

These findings about the diversity of standardization outcomes are in line with the broader ethnomethodological literature on rule-following (Wieder, 1974; Zimmerman, 1974). Ethnomethodologists have argued that invoking norms to justify decisions is always a retrospective activity rather than an activity dependent on the internalization and mechanistic application of norms. Thus, they have focused on people’s reflexive and routine awareness of their actions while making decisions and the multiple contingencies that come into consideration while acting (Heritage, 1984). People, according to ethnomethodologists, have a variety of ad hoc reasons to ignore, partly follow, or completely follow a rule: they are aware of their options and anticipate the reactions when acting. Following Wittgenstein, ethnomethodologists have shown the insufficiency of rules by themselves as either explanations or directives of action. Not only is it impossible to specify all possible contingencies and clearly define all elements of a rule, but such a specification is unnecessary to function as a competent clinician. Clinicians themselves are continuously negotiating what is sufficient to act as a professional for the tasks at hand even though no one can spell out what the exact rules are (Garfinkel, 1967). Even in bureaucratic settings where formalism is elevated to a great art, clinicians “allow practical considerations to take precedence over conformity even as they have to make their action out to be in conformity with existing policy” (Hilbert, 1987, p. 80). Any actual course of action should thus be viewed and studied as a locally situated accomplishment: rules are not simply pre-set abstractions but become part of working professionally.

On a rhetorical level, a complaint about standardization serves to flag mindless homogeneity but, in reality, a vibrant socio-technical world full of intended and unintended and even counterproductive practices emerges once standards are introduced in workplaces. Thus, health care workers subjected to standards come up with creative ways to “work around” standards (Gasser, 1986) and resist mindless work with “soldiering”, games, and informal controls (Noble, 1984). Standards may become ways to hone new skills. Instead of erasing personality, standards may lead to the development of new identities. And instead of imposing pre-set goals, standardization prompts the imaginative achievement of new goals. Too little flexibility may quickly backfire as may too little structure in standards. Countless health information systems have only historical value because they did not allow users to modify settings and programs to address local needs (Berg, 1997). Standards presuming ideal-situations require constant ad hoc tinkering, reappropriation, and explanation: standards excel when nimble to change (Stinchcombe, 2001).

Discussion: a research agenda

We have argued for a reappraisal of objectification, commodification, and standardization, concepts that have lost much of their

analytical freshness. Some social scientists have drawn from neo-Marxist perspectives to warn about the cost of these three processes, but Marx provided a more nuanced argument: he highlighted the social embedding of these processes in power relationships that, under certain conditions, *may* lead to alienation. The danger of focusing solely on the negative consequences of objectification, commodification, or standardization is a further reification of these concepts.

These processes achieve a diversity of substantive results because they refine practice along formal lines. For social scientists, such a refinement may become offensive: “When formality pursues ends alien to us, it is in general because those are the ends of others. It is not the formality that is at fault, but the politics that delivers formal powers to us” (Stinchcombe, 2001, p. 17). The accusatory tone behind much objectification, commodification, and standardization scholarship makes sense if medical care is primarily an institution of social control (Illich, 1976). Recently, health economists and other social scientists have argued that gains in mortality and morbidity over the second part of the twentieth century are due to health care interventions (e.g., Cutler, 2004; Skinner, Staiger, & Fisher, 2006). Many chronic conditions that in the past quickly killed patients such as diabetes, HIV, heart disease, cancer, or asthma now can be addressed with pharmaceutical and other medical interventions, although the success rate of these interventions remains disappointingly low.

The changing engines of health imply a different research agenda for the study of objectification, commodification, and standardization. The call for a more descriptive approach to the study of these three processes is based on the recognition that neither actors nor consequences can be assumed *a priori*, but must be empirically established in all their intended, contradictory, and unintended consequences. We need a much more detailed examination of the diversity of actions that travel under the banner of objectification, commodification and standardization.

This involves expanding the customary perspectives of agency—health care providers objectify patients, corporations commodify in order to profit, third parties standardize health care providers—to include a more diverse set of players, modes of action, and consequences. For example, EBM presumes an “extract and apply” approach to patient relationships in which clinicians view patients as objects of information gathering, and care providers make decisions (Upshur, 2005). While some scholars have hypothesized that EBM affects the kind of patient experiences that become clinically relevant (May, Rapley, Moreira, Finch, & Heaven, 2006), little is known about how patients are implicated in EBM. Since objectification, commodification, and standardization all involve shifts in power, the perspective of those marginalized by these processes is particularly relevant. But, as Bowker and Star (1999) demonstrate, marginalization is itself not a stable category but depends on work to keep the marginalized in place. The result will likely be the discovery of various kinds of objectification, commodification, and standardization.

In health care, a more complex and specific understanding of objectification, commodification, and standardization will contribute to addressing the pressing policy issues of our times. For example, does the standardization of care influence the well-documented stratification of mortality and morbidity by class, gender, and race? Or, how does objectification throughout a diagnostic trajectory affect “compliance” with treatments? To what extent does the commodification of pharmaceuticals and medical technologies, including the inducement of potential profits, result in innovations that produce better health outcomes? Or, what happens when there is not enough commodification? For example, in the case of mifepristone, colloquially known as the French abortion pill RU-486, Carole Joffe and Tracy Weitz (2003) detail the

difficulties of making the drug available in the United States because “no major pharmaceutical firm stepped forward and sought the commercial rights to offer this drug” (Joffe & Weitz, 2003, p. 2355). In a clear example of the mingling of economic and social, drug companies passed over the opportunity to profit because of fears of anti-abortion activists (Joffe & Weitz, 2003). Here, a lack of commodification affected access to health care.

Objectification, commodification, and standardization are rarely ends in themselves, and they can be instrumental in achieving larger health aims. The point is not to presume stable and universal health care goals but to document who aims for what kind of outcomes under which circumstances and then to examine what kinds of actions are made possible to reach these goals. If objectification is indeed the way people realize their human nature, commodification a driver of health care actions, and standardization necessary to coordinate dispersed actions over time and space, this kind of research agenda highlights the underlying processes in which a broad spectrum of intended and unintended consequences in health care are achieved.

References

- Almeling, R. (2007). Selling genes, selling gender: Egg agencies, sperm banks, and the medical market in genetic material. *American Sociological Review*, 72, 319–340.
- Appadurai, Arjun. 1986. *The Social Life of Things: Commodities in Cultural Perspective*. Cambridge: Cambridge University Press.
- Armstrong, D. (2002). Clinical autonomy, individual and collective: The problem of changing doctors' behaviour. *Social Science & Medicine*, 55(10), 1771–1777.
- Berg, M. (1997). *Rationalizing medical work: Decision support techniques and medical practices*. Cambridge, MA: MIT Press.
- Berger, P. L., & Luckmann, T. (1966). *The social construction of reality: A treatise in the sociology of knowledge*. New York: Anchor Books.
- Bowker, G., & Star, S. L. (1999). *Sorting things out*. Cambridge: MIT Press.
- Brown, R. E. (1979). *Rockefeller medicine men: Medicine and capitalism in America*. Berkeley: University of California Press.
- Cochrane, A. (1972). *Effectiveness and efficiency: Random reflections on health services*. London: Nuffield Provincial Hospitals Trust.
- Correll, S., Benard, S., & Paik, I. (2007). Getting a job: Is there a motherhood penalty? *American Journal of Sociology*, 112, 1297–1338.
- Cutler, D. M. (2004). *Your money or your life: Strong medicine for America's health care system*. Oxford: Oxford University Press.
- Dopson, S., Locock, L., Gabbay, J., Ferlie, E., & Fitzgerald, L. (2003). Evidence-based medicine and the implementation gap. *Health*, 7(3), 311–330.
- Epstein, S. (2007). *Inclusion: The politics of difference in medical research*. Chicago: University of Chicago Press.
- Foucault, M. (1973). *The birth of the clinic*. New York: Vintage Books.
- Foucault, M. (1978). *The history of sexuality: An introduction*. New York: Vintage Books.
- Frankford, D. (1994). Scientism and economics in the regulation of health care. *Journal of Health Politics, Policy, and Law*, 19(4), 773–799.
- Freidson, E. (1970). *Profession of medicine: A study of the sociology of applied knowledge*. New York: Harper and Row Publishers.
- Garfinkel, H. (1967). *Studies in ethnomethodology*. Englewood Cliffs, NJ: Prentice-Hall.
- Gasser, L. (1986). The integration of computing and routine work. *ACM Transactions on Office Information Systems*, 4, 205–225.
- Gaukroger, S. (1986). Romanticism and decommodification: Marx's conception of socialism. *Economy and Society*, 15(3), 278–333.
- Gray, B. (1996). The evolution of investor-owned hospital companies. In P. Brown (Ed.), *Perspectives in medical sociology*. Prospect Heights, IL: Waveland Press.
- Grimshaw, J. M., Shirran, L., Thomas, R., Mowatt, G., Fraser, C., Bero, et al. (2001). Changing provider behavior: An overview of systematic reviews of interventions. *Medical Care*, 39(8 Suppl. 2), I12–I145.
- Hafferty, F. W., & Light, D. (1995). Professional dynamics and the changing nature of medical work. *Journal of Health and Social Behavior* 132–153, [Extra issue].
- Healy, K. (2006). *Last best gifts: Altruism and the market for human blood and organs*. Chicago: University of Chicago Press.
- Heritage, J. (1984). *Garfinkel and ethnomethodology*. Blackwell Publishing.
- Hilbert, R. A. (1987). Bureaucracy as belief, rationalization as repair: Max Weber in a post-functional age. *Sociological Theory*, 5(1), 70–86.
- Illich, I. (1976). *Medical nemesis*. London: Random House.
- Joffe, C., & Weitz, T. (2003). Normalizing the exceptional: Incorporating the “abortion pill” into mainstream medicine. *Social Science & Medicine*, 56, 2353–2366.
- Lambert, H. (2006). Accounting for EBM: Notions of evidence in medicine. *Social Science & Medicine*, 62(11), 2633–2645.
- Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge, MA: Harvard University Press.
- Latour, B. (1999). *Pandora's hope: Essays on the reality of science studies*. Cambridge, MA: Harvard University Press.
- Light, D. W. (1993). Countervailing power: The changing character of the medical profession in the United States. In F. W. Hafferty, & J. B. McKinlay (Eds.), *The changing medical profession: An international perspective* (pp. 69–80). New York: Oxford University Press.
- Light, D. W. (2000). The medical profession and organizational change: From professional dominance to countervailing power. In C. E. Bird, P. Conrad, & A. M. Fremont (Eds.), *Handbook of medical sociology* (pp. 201–217). Upper Saddle River, NJ: Prentice Hall.
- McGlynn, E. A., Asch, S. M., Adams, J., Keesey, J., Hicks, J., DeCristofaro, A., et al. (2003). The quality of health care delivered to adults in the United States. *New England Journal of Medicine*, 348(26), 2635–2645.
- McKinlay, J. B., & Arches, J. (1985). Towards the proletarianization of physicians. *International Journal of Health Services*, 15(2), 161–195.
- Marx, K. (1936). *Capital: A critique of political economy*. New York: The Modern Library.
- Marx, K. (1964). *Economic and philosophic manuscripts of 1844*. New York: International Publishers.
- May, C., Rapley, T., Moreira, T., Finch, T., & Heaven, B. (2006). Technogovernance: Evidence, subjectivity, and the clinical encounter in primary care medicine. *Social Science & Medicine*, 62(4), 1022–1030.
- Moller, D. W. (2000). *Life's end: Technocratic dying in an age of spiritual yearning*. Amityville, NY: Baywood Publishing Company, Inc.
- Mykhailovskiy, E., & Weir, L. (2004). The problem of evidence-based medicine: directions for social science. *Social Science & Medicine*, 59(5), 1059–1069.
- Noble, D. F. (1984). *Forces of production: A social history of industrial automation*. Oxford/New York: Oxford University Press.
- Parsons, T. (1951). *The social system*. Glencoe, IL: The Free Press.
- Polanyi, K. (1957 [1944]). *The great transformation: The political and economic origins of our time*. Boston: Beacon Press.
- Prior, L. (1989). *The social organisation of death: Medical discourses and social practices in Belfast*. London: MacMillan.
- Radin, M. J. (2001). *Contested commodities: The trouble with trade in sex, children, body parts, and other things*. Cambridge: Harvard University Press.
- Ritzer, G. (2000). *The McDonaldization of society*. Thousand Oaks, CA: Pineforge Press.
- Sackett, D. L., Rosenberg, W. M. C., Gray, J. A., Haynes, B. R., & Richardson, W. S. (1996). Evidence based medicine: What it is and what it isn't. *British Medical Journal*, 312, 71–72.
- Scheper-Hughes, N. (2001). Bodies for sale: Whole or in parts and commodity fetishism in organs trafficking. *Body and Society*, 7, 1–8.
- Scheper-Hughes, N., & Lock, M. M. (1987). The mindful body: A prolegomenon to future work in medical anthropology. *Medical Anthropology Quarterly*, 1(1), 6–41.
- Seale, C. (1998). *Constructing death: The sociology of dying and bereavement*. Cambridge: Cambridge University Press.
- Sharp, L. A. (1995). Organ transplantation as a transformative experience: Anthropological insights into the restructuring of the self. *Medical Anthropology Quarterly*, 9(3), 357–389.
- Sharp, L. A. (2000). The commodification of the body and its parts. *Annual Review of Anthropology*, 29, 287–328.
- Shojania, K. G., & Grimshaw, J. (2005). Evidence-based quality improvement: The state of the science. *Health Affairs*, 24(1), 138–150.
- Simmel, G. (1990 [1900]). *The philosophy of money*. New York: Routledge.
- Skinner, J. S., Staiger, D. O., & Fisher, E. S. (2006). Is technological change in medicine always worth it? The case of acute myocardial infarction. *Health Affairs*, 25(2), w34–w47.
- Stinchcombe, A. L. (2001). *When formality works: Authority and abstraction in law and organizations*. Chicago: The University of Chicago Press.
- Thompson, C. (2005). *Making parents: The ontological choreography of reproductive technologies*. Cambridge, MA: MIT Press.
- Timmermans, S. (2006). *Postmortem: How medical examiners explain suspicious deaths*. Chicago: University of Chicago Press.
- Timmermans, S., & Angell, A. (2001). Evidence-based medicine, clinical uncertainty, and learning to doctor. *Journal of Health and Social Behavior*, 42(4), 342–359.
- Timmermans, S., & Berg, M. (1997). Standardization in action: Achieving local universality through medical protocols. *Social Studies of Science*, 26(4), 769–799.
- Timmermans, S., & Berg, M. (2003). *The gold standard: The challenge of evidence-based medicine and standardization in health care*. Philadelphia, PA: Temple University Press.
- Titmuss, R. (1971). *The gift relationship: From human blood to social policy*. New York: Pantheon Books.
- Upshur, R. E. G. (2005). Looking for rules in a world of exceptions. *Perspectives in Biology and Medicine*, 48(4), 477–489.
- Waitzkin, H. (1979). A Marxian interpretation of the growth and development of coronary care technology. *American Journal of Public Health*, 69(12), 1260–1268.
- Wieder, L. D. (1974). *Language and social reality: The case of telling the convict code*. Washington, DC: The University Press of America.
- Zelizer, V. (1979). *Morals and markets: The development of life insurance in the United States*. New York: Columbia University Press.
- Zelizer, V. (1985). *Pricing the priceless child*. New York: Basic Books.
- Zelizer, V. (1988). Beyond the polemics of the market. *Sociological Forum*, 3, 614–634.
- Zimmerman, D. H. (1974). Fact as a practical accomplishment. In R. Turner (Ed.), *Ethnomethodology* (pp. 128–144). Middlesex, England: Penguin Education.