Sleep, Signification and the Abstract Body of Allopathic Medicine

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Abstracts   This article focuses on the recent production of sleep as a matter of concern in American society. In it, I draw primarily on fieldwork with sleep researchers and clinicians to understand the means by which ideas about sleep are produced and disseminated, and discuss the rise of sleep medicine since the late 1970s and the ways sleep disabilities have been constructed and mobilized in contemporary allopathic research and practice. The article provides a description of modern sleep medicine practices, and analyses clinical encounters between researchers, clinicians and patients, particularly the ways patient cases are produced and interpreted. I follow these ethnographic observations with textual analysis of the National Sleep Foundation's campaigns to promote sleep awareness, and offer the theoretical concepts of medical abstraction and insistence as a means to understand the production of sleep as a matter of concern, and how it might be made to adhere in particular patients' lives and the practices of clinicians.

Keywords biopolitics, disability studies, medicine, normalcy, semiotics

Making Sleep Abstract

Sleep, within allopathic medicine and biological sciences, only became an object of broad interest at the end of the 20th century, having previously been understood as a relatively benign fact of nature by most physicians outside of the medical subdiscipline of sleep medicine.[1] Along with this emergent interest in sleep, a host of sleep disorders have been nosologically clarified since their invention in the 1950s and 1970s, and a more nuanced knowledge of sleep, its biological and social effects, and its therapeutics, has developed. This led to the

specialization of medical researchers and clinicians in the field of sleep, in some cases generating new wings of extant medical institutions, and often bringing specialists from a variety of fields together in new collaborations (most notably drawing from neurology, pulmonary care and psychiatry). In order to grow further as a subfield at the end of the 20th century, sleep researchers and clinicians found it necessary to make sleep mobile. This required that sleep be rendered abstract, that it become a more porous concept so as to allow its interconnection with diverse spheres of extant knowledge and knowledge-in-production (cf. Deleuze and Guattari, 1987 [1980]: 114). The mobility of sleep as an object depended on a two-fold process of representation: it began with the rendering of patients' bodies as abstract and produced as data from which they could be re-constituted as individual cases (cf. Lock, 1993); with these cases in hand, sleep could be insinuated into diverse spheres of public life, from the family to the workplace and the school, and wherever else representations of cases could be made to resonate. My focus in this article is this abstraction and the application of knowledge, the medical practices that support and affirm these processes, and the bodies produced by this circulation of knowledge, which implicitly produced and reified concepts of normal and pathological sleep through the mobilization of individual and social cases of disorder. I first focus on the production of (objective) medical knowledge and then turn to the clinical and social negotiations of this medical knowledge as it is applied to patients and society generally.

Because allopathic medical knowledge depended on bodies from which it could be abstracted, some bodies defied this process of abstraction, some bodies insisted on being bodies-in-themselves. It is this pairing of processes that I pursue here: the production of *abstract bodies* and the resistances of *insistent bodies*, their roles in allopathic medical practice, and the insinuation of sleep into American social life. In other words, I am interested in the ways in which medical knowledge was produced as an abstract, universal nosologic system, the ways this knowledge was applied by physicians to particular patients' bodies and the ways patients were produced and understood themselves as actants in their relationships with society and their medical disorders (Latour, 1999; Strathern, 1992). I make no claims that sleep was unique in this at the end of the 20th century, or that it was a dominant discourse in the process of dissemination: this same process of abstraction and insinuation may be said to occur with all forms of knowledge, and sleep was only one among many competing medical interests in US society. By examining sleep, however, I am provided with a particular network of actors and a delimited discursive field through which to examine this process of knowledge in action. Sleep provides an aperture through which to examine the mutually constituting roles and conceptions of the body, modernity and biopolitics as they were pursued

in late 20th- and early 21st-century allopathic medical practice, of varying levels of awareness and explicitness.

In the following, I draw on actor-network theory and diverse literature on medical semiotics to show how this two-fold process of representation and insinuation – or abstraction and application – occur. In order to achieve these ends, I ground my analysis in my fieldwork of the practices of medical doctors as they reported patients' cases during weekly staff meetings at a sleep clinic and then turn to the National Sleep Foundation's (NSF) attempts to popularize sleep as a subject of broad social concern, rather than a 'solid' fact of nature (Shapin and Schaffer, 1989: 23); I argue that expanding the network of sleep as an object depended upon its construction as a 'matter of concern' (Latour, 2004), displacing its status as a 'matter of fact' and its presumed naturalness in mainstream allopathic medicine. This process also opened sleep as an object to dialogic negotiation, rendering sleep potentially unstable or experimental (Rheinberger, 1997); while sleep had the potential to become what its advocates hoped it would be, it equally had the potential to become something wholly unintended, some sort of aberrant fact. It was only when it achieved the level of attention desired by the NSF and medical professionals that they would then reassert sleep's nature, but a new nature, which they defined. Throughout these processes of representation, problematization and network expansion, the category of 'normal' was fetishized and played a foundational role in the construction of cases by medical professionals and the mobilization of data into new areas of the network. Implicitly, this was an effort to redefine the very concepts of 'normal' and 'pathological' sleep (Canguilhem, 1991 [1966]), which was vital for the articulation of contemporary ideas of normalcy through which biopolitical regimes and biosocial associations could be produced (Foucault, 1990 [1976]; Rabinow, 1996 [1992]; Taussig et al., 2003); sleep is essential to human life, and it is through the characterizations of 'normal' and 'abnormal' sleep that patients' status as actants was produced and negotiated. By examining sleep, some awareness of the ways populations, individuals and norms were produced through institutional interventions in the production of normalcy can be achieved.

The idea of the norm arose with the ability to produce statistical averages, which, in turn, depended on a widespread cultural interest in such a production, primarily for governmental use and particularly in relation to industrial pressures as well as the developing possibilities of experimental science (Davis, 1995; Foucault, 2000 [1978]; Hacking, 1990, 1991). Lennard Davis argued that this was a movement away from cultural ideals to cultural norms, a productive move – in the sense of productive forms of power (Foucault, 1995 [1975], 2000 [1982]) – insofar as it expanded the category of abnormality to include the whole

population of living humans. For Davis, the construction of norms was coexten-sive with the development of the category of disability; whereas when ideals were operative and all individuals failed to achieve them, norms implied variance – everyone was judged by their distance from the norm, exceptional either in over- or underachievement. Following from this, everyone is slightly disabled from the perspective of the norm – even above-average intelligence or good looks are 'abnormal' – and those people who severely differ from the norm are those who are categorically 'disabled'. Arthur Kleinman has argued that awareness of these minor variances operates through the senses, and especially vision, and finds its roots in the maintenance of personal appearance, leading to a state where 'social control is internalized and political ideology materialized as corporeal feelings and physiological needs' (1988: 13). It is not only in the eyes – and senses generally – of others that bodies are rendered as abnormal, but through one's own eyes that an awareness of abnormality arises; it is through the production of an integral difference between the actant-as-self and the norm or statistical average – based on one's 'corporeally' perceived abnormality and mediated by experts (in this case clinicians) – that individuals-as-actants are produced. The productions and popularizations of norms *and* ideals help to constitute actants, as both operate to provide a foundation from which variance can be articulated, producing thereby *normative ideals*.[2] In American society, the gross semiotics of the body provide this point of divergence and articulation of the self, although ideas of the norm are diffuse and inflected by expectations of what the norm should and could be.

One of the recurrent problems in the practice of allopathic medicine has been the relation between the subjective feelings of the patient and their objective interpretation by medical professionals. This has been discussed in a variety of ways, from Michel Foucault's analysis of medical discourse (1994 [1963]), to Byron Good's and Arthur Kleinman's analyses of narrative and experience (Good, 1993; Kleinman, 1988), to Roland Barthes' study of the production of medical semiotics (1988). What each of these authors took as his central problematic was the alignment of subjective feelings with nosologic assignments of disease, of how subjective ailments were given objective categorization. Kleinman attempted to unsettle any easy production of nosologic determination by expanding the category of disease to include what he referred to as 'illness' and 'sickness':

> Illness complaints are what patients and their families bring to the practitioner.... Disease ... is what the practitioner creates in the recasting of illness in terms of theories of disorder.... [S]ickness [is] the understanding of a disorder in its generic sense across a population in relation to macrosocial (economic, political, institutional) forces. (1988: 5–6)

Implied in Kleinman's discussion, and central to my argument here, is how illness is constructed as disease and then mobilized as sickness; what I perceived in the

sleep clinic where I conducted my fieldwork was the determination not solely of disease, but of sickness, and it was sickness that helped the NSF, researchers and clinicians insinuate sleep as a matter of concern into various institutions in American society, as the NSF attempted to show how contemporary social institutions produced sleep sicknesses, or what came to be reified as proper sleep disorders. What this movement depended upon was the rendering of the individual body (of the patient) as an abstract body, meaning that the individual was rendered as a case, as one among many expressions of a particular disorder, and was made comparable to other iterations (patients) through signifying practices of data collection and analysis. The production of abstract bodies is essentially a semiotic practice, and it is through rendering the body as a sign (or a set of signs, which is generally rendered as statistical data, graphs and charts), and then understood as part of a population of similar cases, that the mobility of sleep as a matter of concern could be achieved. When bodies resisted easy abstraction, generally because they suffered from a variety of disorders rather than simply one, they similarly resisted being incorporated into sleep-disorders-as-sickness and instead were treated as a singular expression of the bundle of disorders they exhibited – they implicitly resisted 'translation', that process of 'moving from the same to the *other*' (Latour, 1988 [1984]: 181), from material to language. In taking such a focus, I sidestep the irresolvable debates about subjectivity and medical expertise (as focused on by Foucault, Barthes, Good and Kleinman), and borrow the language of actor-networks, focusing thereby on how individuals are produced as individuals, how they accept and contest their status as agentive, and how this status is accepted and contested by others (Latour, 1999; cf. Rhodes, 2004; Strathern, 1992). In the following I address how 'normal' bodies were mobilized and how 'abnormal' bodies worked to resist abstraction, and how, further, 'abnormality' erupted into 'normal' bodies, all as integral functions of producing sleep as a matter of concern. These eruptions unsettled and continually complicated the production of normalcy as a stable object (Collins, 2007), which can be seen in the comments of the clinicians in their reports on specific cases: repeatedly, as will be discussed presently, problems of 'normalcy' disrupted the assumptions of clinicians, patients and their families, and challenged the status of individuals as actants.

Cultural norms regarding sleep and social life complicated the constitution of the body as a fact, as a case unto itself, as patients and clinicians negotiated the individual and social disorders of sleep. This was made evident in the ongoing negotiation between patients' 'proto-ideas' of human bodies in general, the particular body of a patient as an individual, and the seemingly objective, scientific knowledge of medical practitioners.[3] What occurred in the dialogical negotiation

of understandings of the body between patient and physician was a challenging of the proto-ideas that individuals held of their body and a replacement of these ideas with the fact of disease (in Kleinman's terminology). Because of the perceived validity of medical knowledge, this was often a one-sided battle, although, as will be discussed below, there was the possibility of rejection on the part of patients. In his study of PET images, Joseph Dumit showed how 'objective' images provided individuals with a view of themselves as medical objects, and, thereby, a foundation from which to articulate an 'objective-self'.[4] What I see occurring in this production of the objective-self (although Dumit did not make this claim) is a struggle between the proto-idea of the self and the facticity of the body, of the disease, and therein the negotiation of one's agency, of one's status as an actant. It was specifically because PET images were material objects – that they acted as matters of fact – that they achieved special valence in the process of actant production, even though, at their core, the images could be interpreted in manifold ways: the PET images were fluid in their meaning (they were abstract), and yet, because of their scientificity, their seeming facticity, they lent themselves as foundational support for the articulation of the self (Dumit, 2003: 4). Dumit explained that:

> Expert scientific *facts* play a key role in how we experience our selves, our bodies, and others … there appear to be many objective bodies that we inhabit consciously, in part through adjusting our categories of persons to account for compelling facts. (2003: 160)

What occurred in late 20th-century sleep medicine was not wildly different from the case of PET imagery, and it produced new regimes of normal and disordered sleep and society.

In the case of sleep medicine, the PET image was replaced with equally objective-seeming brainwave graphs, sleep diaries (grids that act as a record of sleep patterns), actigraphy reports (which indicate levels of sleepiness and activity) and muscle activity graphs. Whereas PET images were recognizable as images of the brain (because they had been popularized as such), the data that patients were provided with in the sleep clinic were much more abstract – waveforms, block graphs and statistics – and, as such, they required even more interpretation for the patient by experts. It is this dual process of rendering the body as data and simultaneously the subject of expert knowledge that constituted the body as an abstract body and which allowed the data collected to be integrated into extant bodies of knowledge, of collections of waveforms, block graphs and statistics that represented, abstractly and universally, 'Restless Legs Syndrome', 'narcolepsy', 'insomnia' and whatever other conditions they may have been correlated with. This process was similar to what Bruno Latour and Steve Woolgar have explained as 'inscription', albeit in a different context, and removed from the human body

altogether: 'Once the end product, an inscription [the abstract data], is available, all the intermediary steps which made its production possible are forgotten ... inscriptions are seen as direct indicators of the substance under study' (1986 [1979]: 63), also explaining that 'inscriptions are regarded as having a direct relationship to "the original substance"' (cf. Latour, 1999; Latour and Woolgar, 1986 [1979]: 51). This production of the medically abstract – an abstraction from the materiality of the body as it was understood in allopathic medicine – was explained by Roland Barthes as the manufacturing of a sign:

> The [disease] symptom would be the apparent reality, or the real appearance. . . . [T]he physician would then be the one who transforms, by the mediation of language . . . the symptom into a sign. . . . [T]he sign, as opposed to the symptom, belongs to the field of the intelligible. (1988: 204–5)

What I refer to as abstract bodies are one step beyond Barthes' sign: abstract bodies are assemblages of data wholly divorced from a body, and mobilized within medical discourses in order to construct nosologic understandings of diseases-as-signs. In so doing, medical populations can be produced, an abstract entity that individuals can be interpellated into by themselves or others, and thereby have their agency established through their institutionalized roles as a properly demarcated actact (Hacking, 1999 [1986]; Petryna, 2002; Rabinow, 1996 [1992]; Rapp et al., 2001). Barthes argued that 'for the sign to perform its signifying function' within medical semiotics, it relied upon 'a sort of corporeal support, a particularized site' (1988: 207). This movement can occur in either direction, i.e. abstract knowledge can be generated from a body or applied to a body; in the case of sleep medicine, and presumably any medical discipline with a well-articulated nosological corpus, it was equally abstraction from and application to, as patients were both diagnosed as (particular) sufferers and added to extant populations of (universal) sufferers.

Making Sleep Matter

When patients came in for diagnosis at the Midwest Sleep Disorder Center (MSDC),[5] they proceeded through three steps, with minor variations. Patient consultation began with the patient being admitted under a doctor's supervision, generally a doctor who had some special knowledge of the preliminary diagnosis, based upon either the patient's self-diagnosis or recommendation from a referring doctor. The patient and doctor met to discuss the patient's complaints, and the doctor performed a visual, aural and tactile diagnosis of the patient. What the doctor was looking for during this process were physiological markers of sleep

disorders, from circles under the patient's eyes to cleft palates, bone dimorphism and labored breathing (to name only a representative few). After this exam, the doctor provided a preliminary diagnosis and the patient advanced to the next phase. The patient would then spend the night in the sleep clinic in a small examination room, large enough for a television, bedside chair, single bed and an adjoining bathroom (Figure 1).

A variety of sensors were placed on the body – 24 electrodes, regardless of the preliminary diagnosis – which fed information into the control center, under the supervision of sleep technicians (Figure 2). The sensor information recorded breathing, muscle activity throughout the body, eye movement and brainwaves, all of which were captured on computerized graphs – lines of hairpin clusters and labored waves; this was coupled with real-time infrared video feed of the sleeping body of the patient. Thus the body was rendered a knowable object through not one mode of signification, but a multiplicity. In the morning, the doctor whose care the patient was under would review highlights of the video footage and the sensor readouts as designated by the sleep technicians. From this material, the preliminary diagnosis was either confirmed or complicated. If it was the latter, the patient restarted the process; if it was the former, the patient received treatment appropriate to the condition, ranging from surgery to CPAP or BiPAP machines (intended to aid breathing in obstructive sleep apnea patients) to medication. What becomes evident in recounting the diagnostic process is the

Figure 1 A view of a bedroom in the clinic. Photograph provided by Tom Lynch, 2006

Figure 2 A view of the sleep clinic's control center. Photograph provided by Tom Lynch, 2006

constellation of signifying practices that the body is subject to, all in an attempt to ascertain the logic of the body, how it is disordered and how it might be ordered, how it can become 'normal' through treatment, as well as how it fits into universal nosologic categories.

The following is the case of a body that resisted abstraction; it highlights the contradictions between what made an appropriately 'good' case within sleep medicine and what made a representable case for the purpose of sleep as an object. This was precisely because the patient was 'abnormal', having a disfigured body as well as sleep disabilities.

> Dr Richards presented the case of a 17-year-old boy who suffers from Treacher-Collins Syndrome [which results in the malformation of the skull]. His deformity causes there to be no open airway unless he holds his jaw in a particular way, which has led to an obstructive sleep apnea. Richards circulated the picture of the boy and remarked that it was a 'classic picture of Treacher-Collins'. Two pictures of the patient and four x-rays of his head (from front, back and both profiles) were passed around the table. In the x-rays his skull looked as if it had been pinched, as if it had been unevenly compressed in random places. The pictures showed a boy with longish hair (about chin length, arranged to cover his deformities). . . . One eye was lower than the other, his chin was almost non-existent, and his cheekbones were concave. . . . Richards closed the discussion with the opinion that this was a 'good case'.

The problematic nature of this case was in the exceptionality of the body, and the inability of medical semiotics to fully represent it, to abstract it from its overdetermining 'corporeal support' (Barthes, 1988). Moreover, because the

patient was as 'abnormal' as he was, he failed to fit into the model that the sleep researchers needed to construct in order for sleep disorders to widely disseminate themselves and to popularize sleep medicine; if anything, the face of Treacher-Collins could only ever be the face of Treacher-Collins, and sleep medicine must put forth as 'normal' or ideal a face as possible in order to make its public appeal. This patient is an example of an insistent body, as that kind of patient who defied easy abstraction, who resisted being reducible into particulate data. As Richards shows above, this patient – or rather any patient with an insistent body – made a 'good case' in and of him- or herself; these patients became tales to tell rather than knowledge to disseminate.

The resistance to abstraction should not be construed as being an inherent quality of the patient's body; rather, this resistance was produced through the practice of medical semiotics – it was produced in the margins of medical processes of signification which strove toward the production of universal categories and relied on individual cases. Medical professionals appreciated 'good cases' (I focus on this presently) and there was a decided social capital to presenting or having a 'good case' (cf. Bourdieu, 1984 [1979]). This is not to say that medical professionals were uninterested in treating 'good cases' – like any patient, such patients received the medical treatment they required, and, as in the case of the patient with Treacher-Collins, there was as much social capital in healing such patients as in presenting them. What made patient bodies insistent then was not something essential *in* the body, but rather the ways in which a body was *translated* into medical semiotic systems, stressing its particularities rather than its universalities. These translations resonated with cultural ideas about normalcy, or rather, they provided examples of abnormalcy through which ideas about what it meant to be normal could be developed and clarified. In addition, 'good cases' were valued because of the discussion they often provided; the patient with Treacher-Collins was presented, in part, by a visiting surgeon in charge of the patient's osteopathic surgery. In the following excerpt, the surgeon uses the case to relate the peculiar history of an obscure medical procedure, that of extending the patient's skull through gradual extraction.

> The visiting surgeon remarked that the patient was a perfect recipient of 'distraction osteogenesis,' a process whereby new bone is grown to extend the extant skull. The surgeon, for the benefit of the staff for whom this was all new, told the history of the discovery of the process. As the surgeon related it, a Russian doctor reversed the screws while trying to fix a leg and found that the leg grew longer. Richards remarked that it might be time for that patient to start 'living on a hill' to even out his step, and Dr MacTaggert remarked that it sounds like the case of 'sneezing into a Petri dish' and making a science experiment of it. . . . The surgeon remarked that they would distract the boy's skull at the rate of a millimeter a day and Richards was surprised that it could be done so quickly. The surgeon then related that a Mexican physician has done much more dramatic operations, basically removing the face of patients and extending

the bone through artificial means at incredible rates, and with great success – he 'drags the face forward'. The whole of the staff were rather shocked at this. The surgeon remarked that 'the body isn't that smart' and can't tell what's being done, only that it needs to produce the right material to cope with the situation.

'Good cases' unfolded into histories, anecdotes and jokes, not simply regarding the patient at hand, but in relation to medicine more generally. Moreover, such 'good cases' allowed the presenting physician to opine openly, as in the surgeon's claim that 'the body isn't that smart', stressing the universality of any patient's body and its potentials.

It might be construed that these 'good cases' were the subject of implicit competitions, and that the presentation of medical cases was a game of one-upmanship. This seemed to be the case in the following presentation, which was concluded with a senior researcher asking 'Can anyone top that?'

Dr Pym presented the case of a 15-year-old boy who was recently admitted to Children's Hospital, brought there by his mother from Los Angeles Children's Hospital (LACH) due to her feeling that LACH was doing a poor job of pain management for the boy. Pym explained, by way of introduction, that the boy was 'the unluckiest boy I've seen in 20 years', to which Richards joked that, considering Pym's history, that that was really saying something; alternatively, Pym opined that the boy may be the greatest case of Munchausen syndrome he has ever seen. The boy was being treated by a doctor at LACH for congenital atria failure, which is incurable and must be aided through the use of pacemakers. Pym reported that the boy had the pacemakers turned off and that it seemed that he spontaneously healed. Richards asked who the boy was seeing, and suggested that it might be Oral Roberts [an American televangelist]. More recently the patient has been suffering from headaches related to the removal of a brain tumor; Pym added that the boy also suffers from immune deficiency. Richards suggested that it's a clear case of Munchausen by proxy and that the brain tumor was probably just a pineal cyst or something else innocuous. Dr Samson asked whether Pym had seen the charts from LACH, to which Pym replied that he's still waiting to see them. Richards opined that this case is 'beyond the pale' and that it's 'Munchausen by proxy – I betcha'. Pym explained that he's only been asked to treat the boy's sleep problems, and that everything else was being treated by someone else at the Children's Hospital. The boy is an in-patient due to his need for a Dilauden drip and other regulated treatments. Richards asked what they could possibly do for the sleep problem, explaining that the boy is effectively anesthetized and lacking a biological rhythm; how could they figure out what to do with his various problems and the amount and kinds of pharmaceutical needed. He went on to joke that this is the kind of patient that 'when you see it coming – duck'. Samson asked what the boy's name is, to which Richards joked that it's probably Baron von Munchausen. Samson then asked if the boy was dressed strangely when Pym saw him, resulting in the staff reacting with laughter. Richards asked 'Why would you ask *that*?' and Samson explained that strange dress is often associated with Munchausen syndrome. Pym said that the case was 'to be continued', to which Richards replied 'to be avoided' and 'Finders, keepers'. Dr Blake asked if there was anyone else who had a case to report, and Richards joked that what Blake really meant was 'Can anyone top that?'

Rather than a competition – no one attempted to 'top' this case – 'good cases' were appreciated by the clinic's staff for what they were, evidenced by the ways others interjected in the relating of the case.[6] Moreover, there was ambivalence

about being the attending physician on 'good cases' as they could be difficult to handle, to appropriately treat. Richards' reply that it was a case 'to be avoided' denotes the underside of a case's value, it shows how a 'good case' needs to be produced by the attending physician, and was not 'good' in itself. 'Good cases', before their mediation, their translation into nosologic terms, were often unsettling to the researchers and clinicians, and, more importantly, to the patients and their families, hence their efforts to seek treatment.

'Good cases' were common and were a central component of sociality at the sleep clinic. While 'good cases' could sometimes be reduced to simple medical problems, it was their potential insistencies that intrigued medical researchers and clinicians; presenters of such cases often attempted to fill in as much detail as possible in an effort to effectively produce 'good cases':

> Dr Palmer presented a 'case that was too good not to share'. Dr McCoy explained that it was a referral, that the man is 46, and that he has behaviors that extend back to the age of 18–20. Palmer picked up from this and explained that the man had problems related to incest, beginning with being molested by his older brother, and, in turn, molesting his younger sister. He went on to recount that the man was married at the age of 18 (or thereabouts), and that his sleepwalking and other behaviors extend back at least that far. The patient routinely walks through the house, sometimes butting up against the walls; if his wife awakens him during the behavior, he has recall of his dreams and actions, but otherwise he is totally amnestic. Palmer also reported that the man fondles his wife in his sleep, which is causing her some grief. The patient is also a sleep eater, the most remarkable instance of which was the making of 'cigarette stew' – Palmer joked that he would get the recipe for everyone at the clinic. Of all his actions, the one that embarrasses him the most was his public urination: on a couple of occasions, the patient awoke to find himself outside, partially naked, urinating. Palmer also explained that the man had been studied at the clinic in 1994, but that only his sleep apnea had been treated; Richards remarked that he must not have complained of the other matters, because they would have been treated if he had, in part because they're much more interesting than his apnea. Palmer then explained that, around the age of 30, the man had a recurrent dream for about a year of a dog running around his bed, which was totally unexplained. Richards opined that it's probably a case of psychogenic dissociative disorder, to which Samson concurred, recommending a full battery of psychological screening.

Like the classic cases of psychoanalysis (Freud, 1993a [1963], 1993b [1963]), these cases were both particular and universal. In other words, while they partook of universal concerns in allopathic medical practice, these concerns were brought together in such a way as to produce the particularity of the patient under scrutiny.

When patients and their families attempted to reconcile the diagnosis they had received (the universal) with the individual and family experience of the illness and cultural norms (their particularity), the status and roles of individuals as actants were often challenged. In the following excerpt, a pediatrician presents the case of a Somali baby who had been brought into the sleep clinic due to a

severe sleep apnea, which resulted in the child having stopped breathing alto-gether on numerous occasions, only to be quickly revived by the mother.

> Blake presented the case of a 12-month-old baby. . . . The child is a noisy breather, and numerous staff members remarked that he 'sounds awful'. One of the technicians had seen the father of the baby in the garage after the sleep study and asked how everything went; the father replied that the baby was 'normal, everything's fine'. This raised some concern among the staff regarding denial. . . . McCoy remarked that the baby 'looked odd too' and that there is no 'comprehensive label' for the child's disorder.

Although the child was recommended for admission and surgery, the parents, though they knew something was wrong, ignored the diagnosis and never returned to the clinic. The father's words are hearsay, but it is notable that the technician who reported them translated them into the rhetoric of normalcy. The category of 'normal' was often employed within the clinic as a visual marker – as McCoy made evident in his remark that the baby 'looked odd' – and was often set against behavioral abnormalities; in other words, observers were often jarred by dispar-ities between the appearance of the body and the behaviors that it enacted. Addi-tionally, because there was an increasing awareness of the relationship between obesity and obstructive sleep apnea (and, in some cases, between obesity and sleep-related eating and Restless Legs Syndrome),[7] normal bodies were sometimes surprising to the clinicians because they obscured abnormal internal physiologies, as is made clear in the following excerpts; in some cases, because of this element of surprise, these 'normal' bodies provided 'good cases'. This raises questions about the body as a signifier of the signified self – both for the individual and his or her social relations – of the interaction between individual conception of his or her agency and the body that mediates being in the world, of being social.

> Pym presented the case of a two-and-a-half-year-old girl – a loud snorer – whose mother had diagnosed her as needing her tonsils and adenoids removed. . . . Pym circulated her file to show how 'normal' she looked – specifically mentioning that she had no facial abnormalities that might cause any problems – and multiple people noted her precociousness and cuteness.

> Dr Hall related the case of an 11-year-old boy with insomnia and excessive daytime sleep-iness. . . . He went on to remark that there is very little obviously wrong with the boy from a physiological perspective, and outside of the occasional little snore (he made a slight snort-snore to emphasize this), the boy was 'totally normal'.

Because these cases were children, they were disarming not only for the clinicians, but also the authority figures who made up the children's social spheres – notably teachers and parents – made evident in the reaction of the father of the Somali child mentioned above. This was especially problematic in cases where there were medical issues that were more extensive (and less treatable) than apnea, insomnia or narcolepsy, not only for the doctors but also for other authority figures who

perceived no parity between the physiological disability the child was affected by and the child's appearance.

In the following, one of the staff pediatricians reports on the case of a child, who, while 'normal-looking', was anything but:

> MacTaggert presented the case of an 8-year-old boy with 'normal facial features' who suffers from both hyperactivity and 'severe retardation'. She mentioned that he has 'very disrupted sleep', that he also has a very small amount of required sleep, and that he often sleeps for a very short period and then is 'off like a bullet'. She gave a list of medications that the child has tried for sleep, and the list was in the tens of drugs. . . . MacTaggert stressed that the boy was a 'fair-haired, normal-looking kid'.

One of the other clinicians commented on the boy, remarking that he 'terrorized' his family with his constant wakefulness – the parents were sleep-deprived, depressed and at a loss as to what they should do about the situation. This was exacerbated due to the incongruity of how the child looked and his behavior, which, although this was an extreme case, was evident in many of the narratives presented herein: the visual norm was in stark opposition to the hidden, abnormal physiological aspects. What was required for diagnosis and treatment to occur was the process of abstraction; patients had to undergo diverse data-collection procedures in the clinic to be rendered as data, as a set of facts or a 'good case', and hence analyzable. It was only when a sizable population could be evidenced that the data could be mobilized and insinuated into other social institutions. From pharmaceutical companies to schools to workplaces, it was only when a disorder could be recognized as a disorder that it could be treated as such; previous to that, it could only ever be disorder itself, simply disrupting social life. Thus, this process of abstraction was a double-edged sword: recognition was vital for sufferers, as they received institutional attention for being aligned with a recognized nosologic disability, but at the same time, by being reducible to such nosologic diagnoses, they were rendered a mute object within a larger population of sufferers and were treated as one among many (cf. Heath et al., 2005; Petryna, 2002; Rabinow, 1996 [1992]). What may have led to solutions for this was for sleep, as a matter of concern, to insinuate itself into diverse institutions so that the American public as a whole became aware of their sleep disorders, their sleep sicknesses, and their culpabilities and agencies.

Making Sleep Insinuate

Throughout the 1990s and 2000s, the NSF – to borrow a metaphor from Bruno Latour – was in the process of laying rails into American society to insinuate sleep as a matter of concern as broadly as possible. This required a diverse body

of data, as well as norms, ideals and normative ideals, all of which operated as sites for the negotiation of individual and group agencies. As Latour has remarked, 'Scientific facts are like trains, they do not work off their rails' (1983: 155), and it is necessary for networks to be constituted for the facts produced by science to succeed – to be accepted, popularized and funded (Oudshoorn, 2003). The NSF was attempting to popularize sleep through appeals to teachers and school administrators, parents and children themselves, the latter through a comic book entitled *Time to Sleep, with P.J. Bear* (NSF, 2003). What this entailed was not solely the production of facts *qua* facts, but a mobile assemblage of data (Deleuze and Guattari, 1987 [1980]) that had the potential to be interpreted in various ways so as to meet the demands of the situations that presented themselves in the lives of potential sufferers (within the school, the family, the workplace); what was required was abstraction from the bodies that populated the sleep clinic into generalizable, nosologic categories. This depended on abstracting sleep from its 'corporeal support' and couching it within diverse normalizing strategies, which resulted in rendering sleep as an object able to be incorporated into institutional expectations of bodies and their behaviors. The NSF's position on sleep deprivation is neatly summed up in the following passage from one of their weekly alerts: '[T]oo little sleep results in daytime sleepiness, increased accidents, problems concentrating, poor performance on the job and in school and possibly increased sickness and weight gain' (NSF Alert, 10 November 2004). How, it might be asked, can one afford not to take sleep seriously when it impinges on so many aspects of life itself? In this section I discuss two media of insinuation, the weekly 'NSF Alerts' and *Time to Sleep, with P.J. Bear* (NSF, 2003) and how the co-production of sleep's abstraction and its insistence was critical for the NSF to entangle others in their project of 'waking America to the importance of sleep'.®

The following blurbs were taken from NSF Alerts, and were chosen because of the age groups they involved as well as the causal breadth that was attributed to sleep and sleep deprivation. Each NSF Alert contained three to four such announcements, primarily intended for a general audience.

Do Sleepy Toddlers Turn into Drug-Using Teens?

A long-term study has found that young teens whose preschool sleep habits were poor were more than twice as likely to use drugs, tobacco or alcohol. . . . [The study] found a significant connection between sleep problems in children and later drug use, even when other issues such as depression, aggression, attention problems and parental alcoholism were taken into account. . . . The researchers suggest that early sleep problems may be a 'marker' for predicting later risk of early adolescent substance abuse – and that there may be a common biological factor underlying both traits. (NSF Alert, 21 April 2004)

Sleep May Be a Predictor of Adolescents' Self-Esteem

A lack of sleep is associated with feelings of depression and low self-esteem among middle school students, according to a report in the January–February issue of *Child Development. . . .* Students who obtained less sleep in sixth grade exhibited lower initial self-esteem and grades, and higher initial levels of depressive symptoms. Students who obtained less sleep over time also reported heightened levels of depressive symptoms and decreased self-esteem. (NSF Alert, 18 February 2004)

Thus, for adults, the sleep habits of children must be attended to for fear that the child might develop drug habits, low self-esteem or get poor grades. Similarly, *Time to Sleep, with P.J. Bear* attempted to insinuate sleep as a matter of concern into the lives of children. In an extremely didactic fashion (it is hard to believe any child would actually read the comic for enjoyment, despite the anthropomorphic animals involved), P.J. – with the help of his friend Rudy the Rooster – demonstrated how playing video games, drinking soda and eating candy before bed might disrupt sleep. Rudy serves as a negative example, sleeping through his duties on the farm where he and P.J. live, leading P.J. to list the positive effects of a full night's sleep as no less than more energy for sports and playing, greater capacity for learning and memory, an improved immune system, more self-confidence, heightened capacity for paying attention, and 'eyes, face and skin look healthier' (or more normal?). The children portrayed in the comic, who were the recipients of P.J.'s advice, were ethnically diverse and evenly male and female (as evidenced in the cover presented in Figure 3), allowing, presumably, a wide array of children to identify with the 'normal' children in the comic and to strive to incorporate P.J.'s advice into their lives.

This process of interpellative identification is how ideals work coextensively with norms. In other words, in order to make abstract data 'real' it must be re-embodied. These re-embodiments might be thought of as normative ideals, rather than idealized norms, i.e. rather than being a living embodiment of averageness, they are ideals that structure ideas about being normal. The choice of Rudy as a protagonist in the narrative was canny: Because no child could identify with Rudy wholly – although they may recognize individual behaviors that they share with him – he failed to provide children with a normative ideal. In other words, as much as children might have liked Rudy and found him humorous, they could never *be* Rudy. Instead, they were provided with a multi-ethnic cast of children to identify with, all of whom implicitly accepted P.J.'s wisdom. Moreover, the children were drawn in such a way to be virtually featureless outside of their ethnic markers (particularly skin and hair color and eye shape), allowing for broad possibilities of interpellative identification (cf. McCloud, 1993: 130–1). This process of interpellative identification was vital to widening the network in which

sleep resonated: only the data needed for sleep to adhere in medical practice and popular awareness could be mobilized – anything more than that might have tainted the messages actors were attempting to convey about sleep.

The NSF was simultaneously working on the potentiality for sleepy bodies to be both abstract and insistent, although targeting different populations in order to motivate awareness of sleep. The NSF Alerts depended on the interpretation of readers – concerned parents, school administrators, researchers and clinicians – who were able, in their various ways, to apply the information to understand those children in their daily lives; in effect, this effort at abstraction raises the suspicion of concerned adults, who, it was implicitly hoped by the NSF, would begin to scrutinize the actions of youth so as to ascertain whether they were sleep deprived or otherwise disordered. In my survey of three years' worth of NSF

Figure 3 The cover of *Time to Sleep, with P.J. Bear*

Alerts (2003–6), statistics were very rare, as were any other quantitative expressions of the data that the NSF was alerting the public to; rather, it was qualitative expressions of sleep disorders that were highlighted, which allowed the diverse readership of the Alerts to root their expanded knowledge of sleep in the 'corporeal support' of those around them. *Time to Sleep, with P.J. Bear*, however, worked on children themselves, and provided Rudy as a particularly insistent body. Rudy was unquestionably a 'good case': what could be more extreme than a rooster who failed to wake his farm? Further, as shown in Figure 4, Rudy plied himself with great quantities of sweets (cake, candy bars, muffins, soda), combining this with the influence of video games, and ended up, tongue flaccidly hanging out, an unforgettable case.

Making Sleep Inevitable

Allopathic medicine at the turn of the 21st century, particularly sleep medicine, had trouble with the relationship between the universal and the particular, between the abstract and the insistent, between nosologic categories and the individual bodies of patients. This is not to echo Barthes' 'corporeal support' as a pre-existing material fact; rather, this corporeal support was discursively produced as if it were pre-discursive, as if it was always a matter of fact, against which the matters of concern variously mobilized by researchers and clinicians could be set – in this case that of sleep and the sicknesses the temporal regimes of late 20th-century US society produced. To abstract the data from the bodies which the data represented depended upon the facticity of bodies; to render abstract data applicable to particular bodies depended on the data being accepted as unproblematically factual. When individual bodies frustrated this process, it was through the
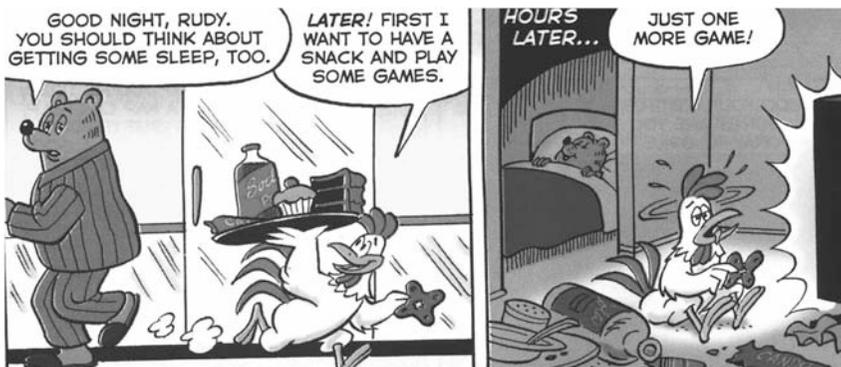

Figure 4 Interior frames from *Time to Sleep, with P.J. Bear*

discursive insistencies of their particularities, their status as 'good cases' – and also as exceptions. As Latour has argued: 'There is no outside of science but there are long, narrow networks that make possible the circulation of scientific facts' (1983: 167). At the turn of the 21st century, the NSF and sleep physicians were in the process of attempting to broaden the network that sleep circulated within as a matter of concern, and the stakes they had set were no less than the physical and mental health (inasmuch as they can be separated) of individuals and US society. The widening of the network depended on these stakes being made real, and enrolling diverse populations into the competing regimes of intentionality in the continuing sleep sicknesses of the US public. One of the potential problems that the proliferation of sleep 'disorders' might result in is leading Americans to question what 'normal' sleep might be. The stakes of making sleep a matter of concern were no less than the destabilization of the very category of 'normal' and of the normative frameworks of time–space that structure the social experiences of actants and their environments, from those of the workplace and school, to the family. Moreover, as evidenced in the return of the sleepwalking defense, 'normal' sleep was concurrently under scrutiny as it related to the law; 'abnormal' sleep was coextensively the subject of research by the US military, as they attempted to develop processes through which soldiers could maintain vigilance in periods of sleep deprivation, evidencing the strange relationship between sleep and the state.[8] In all of these domains, it should be stressed that what was at stake was the redefinition of human life itself, of its capacities and potentialities.

I would like to conclude this article with no conclusion at all. Rather, as Emily Martin has identified in another medical area of concern – namely that of immunology and its metaphors – these medical/cultural processes are always inconclusive, are always experimental (Martin, 1994; Rheinberger, 1997). Like Rudy the Rooster, there is always 'just one more game', one more incremental widening of the network. At the turn of the 21st century, sleep medicine was in a phase of very intense network expansion and, as such, the ethnographic vignettes and popular texts I have presented here are only a fraction of the forces conspiring to alter the 'nature' of sleep in US social life. This is not necessarily a problematic series of events – Americans *may* emerge healthier and better rested. However, this may be an expensive and lengthy process, and requires contests of strength to be fought in the school, the workplace and the family, in policy and the law, and not solely in the clinic and scientific laboratories. Representatives from the medical and scientific disciplines may ally themselves with those fighting for healthier regimes of sleeping and wakefulness, or they may retreat into the 'pure' science of sleep and biology. Sleeping, at the turn of the 21st century – in all its ubiquitous banality – could not possibly be more political.

Notes

1. As evidence of this, while *Sleep: The Journal of Sleep and Sleep Disorders Research*, an official publication of the Associated Professional Sleep Societies, LLC, began publication in 1977, only in 2005 was there enough research being conducted to warrant another journal, the *Journal of Clinical Sleep Medicine*, a publication of the American Academy of Sleep Medicine (a subset of the Associated Professional Sleep Societies).

2. In their précis of biopolitics, Ferenc Fehér and Agnes Heller make a similar remark regarding the function of 'health': 'By and large the politics of health is successful insofar as it transplants a massive guilt feeling, the prerequisite for the victory of the course of "discipline and punish", into the psyche of the individual' (Fehér and Heller, 1994: 68).

3. Ludwig Fleck explains proto-ideas as those which:

> . . . must be regarded as developmental rudiments of modern theories as originating from a socio-cogitative foundation. . . . The value of such a pre-idea resides neither in its inner logic nor in its 'objective' content as such, but solely in the heuristic significance which it has in the natural tendency of development. And there is no doubt that a fact develops step by step from this hazy proto-idea, which is neither right nor wrong. (1981: 25)

4. Dumit explains that 'The objective-self consists of our taken-for-granted notions, theories, and tendencies regarding human bodies, brains, and kinds considered as objective, referential, extrinsic, and objects of science and medicine. . . . Objective-selves always pull at issues of normality' (2003: 7–8).

5. This is a pseudonym. I have chosen to render the identity of my fieldsite and the sleep researchers and clinicians I worked with anonymous for the sake of their privacy.

6. This case, unlike the Treacher-Collins case provided above, has not been edited for content, and is presented here in full.

7. The relationship between obesity and sleep apnea had been studied intensely through the late 1990s and early 2000s, as a linkage between the gross physiological impacts of obesity and apnea were increasingly apprehended to be molecular rather than simply a matter of physique (Fogel et al., 2002; Gami et al., 2003; Strobel and Rosen, 1996).

8. I discuss these cases of sleep's contestation in family, school and work contexts, as well as contemporary and historical military and legal explorations, in Wolf-Meyer (2007).

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