The Philosophy of Public Health

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ASHGATE

than in the case of newborn screening for being sensitive to and inquiring after the particular individual's wishes.[15]

Information on one's health status tends to be gradual. Informing persons that they are at risk, or a carrier, or affected, or that the first symptoms of a disease are beginning to develop, are all very different types of conveying knowledge. Thus to inform a person can mean very different things in different contexts. However, 'a right to choose information' wrongly suggests that there is a single piece of information 'out there', and that we can either choose to pick it up, or choose not to. In opposition to this I would stress that whether or not informed consent is appropriate depends on other features of the case at hand than merely the question whether a person gets to choose.

By dropping the demand for autonomous choice in newborn screening, I have not claimed that an informed consent procedure for newborn screening is unnecessary or a mere burden. Informed consent procedures have other purposes than just the protection of autonomy. Other considerations are taken in account when assessing the desirability of a particular screening programme, such as privacy and well-being. I do believe that the argument for a right to choice loses its initial force, and that it does not give us a trumping argument against screening for MCADD. Even if a screening programme implies that people do not always get to decide about all the information that is available on the health status of their children, this need not be a decisive argument against this screening. Since we cannot expect parents to control that which is out of reach, it is not necessarily paternalistic not to offer them a choice.[16]

[15] A complication is of course that since Huntington's disease is an inherited disease, results can affect others too, in a much more direct way than in the case of newborn screening. This should not take away the attention from the point I wish to make, which is that when a disease runs in the family there is already much information available to its members, even before they themselves are tested.

[16] I greatly benefited from the comments of Anne van Bergen, Deryck Beyleveld, Bernice Bovenkerk, Angus Dawson, Marie Gaille, Annemarie Kalis, Lonneke Poort and Paul Sollie on earlier drafts of this paper.

Chapter 11
Choosing to Sleep

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In a recent article in the *Journal of Public Health* ('Who has time to sleep?') one co-author demonstrated that 'high-risk sleep durations (short-sleeping and long-sleeping) are positively associated with sociodemographic categories associated with poorer health'.[1] Hale's paper has generally been read with the understanding that 'poorer health' is an undesirable objective and that the conclusions of such research are obvious: public policies that encourage populations to practice effective sleep hygiene ought to be encouraged. (The National Sleep Foundation, for instance, offers a set of sleep hygiene tips that derive directly from the observation that better sleep habits are correlated with better health).[2] But this is not necessarily the only implication of such research. It could instead be argued that sleep patterns reveal a necessary connection with other important normative variables, like opportunities to freely will and fulfill life projects.

In this paper we will claim that individual subjects do not have so much control over sleep that it can aptly be characterized as a personal choice; and that normative implications related to public health and sleep hygiene do not necessarily follow from current findings. It should be true of any empirical study that normative implications do not necessarily follow, but we think that many public health sleep recommendations falsely infer these implications from a flawed explanatory account of the decision to sleep: the consumer choice view. This view, which we criticize here, proposes that sleep duration and sleep quality can be understood as one choice among many.

Our strategy will be the following. First we will give a brief overview of the treatment of sleep by empirical researchers, and turn specifically to a linear model of sleep that has been dominant in the past. In this case, Hale (2005)

[1] L. Hale, 'Who has time to sleep?', *Journal of Public Health*, 27/2 (2005): 205-11.

[2] See http://www.sleepfoundation.org/ Sleep hygiene is a term used to refer to a set of sleep-promoting habits such as establishing a regular bedtime routine and schedule, using relaxation techniques before bedtime, limiting sleep to the bedroom, avoiding stimulants and/or large meals before bedtime, exercising regularly but not within one hour of bedtime, limiting light in the bedroom, and keeping the bedroom at a comfortable temperature.

presents innovative methodologies that fly in the face of earlier linear models of the relationship between sleep and sociodemographic variables. We understand models of sleep to be primarily descriptive and to fall into at least two categories: the linear and the curvilinear.[3] Our concerns in this paper, however, relate to explanatory accounts, or views, of what is happening in such models. We will therefore discuss what we will call the 'choice view' (or 'consumer choice view') of sleep, which proposes that one can choose to sleep; versus the 'autonomy view' of sleep, which proposes that sleep tracks autonomy. It will be our position that while the descriptive linear model of sleep does lend itself to the explanatory choice view, the descriptive curvilinear model of sleep challenges the choice view. Instead, the results of the curvilinear model can better be explained by the autonomy view.

It is our primary purpose to argue that although the choice view may be the simplest way to conceive of sleep, it is neither the view that best explains the data, nor the view that best suits a robust picture of the decision to sleep. Following Norman Malcolm, our presupposition will be that sleep cannot adequately be understood as a 'choice' because the subject retires, so to speak, upon falling asleep.[4] It is far more helpful, therefore, to conceive of decisions to sleep as composed of a set of action parameters that the subject sets for himself by deference to practical reasons. In the much bigger picture, though unfortunately not in this short paper, what we argue is that the parameters of sleep-time should be construed as more-or-less flexible options over which one can exercise autonomous control. These parameters constitute the extent of the choice to sleep, and these parameters are frequently shaped by external considerations tied to fulfilment of life projects.

Empirical Research

Literature on Sleep Duration and Health

The simplistic perspective that 'more sleep is always healthier' is called into question by a large body of empirical evidence showing that both ends of the sleep duration distribution are associated with higher morbidity and mortality risks.[5]

[3] As you will see later, we use the term 'curvilinear' to refer to an upside down U-curve in which the optimal amount of sleep ranges between 6.5 and 8.5 hours with the peak being somewhere in between and with those sleep durations outside the optimal being sub-optimal and so tapering near the ends of the distribution. In work by Hale (2005), she does not model a smoothed curve, but rather a 3-category model of duration of sleep for modelling simplicity.

[4] N. Malcolm, 'Dreaming and skepticism', *The Philosophical Review*, 65/1 (1956): 14-37.

[5] A. Tamakoshi and Y. Ohno, 'Self-reported sleep duration as a predictor of all-cause mortality: results from the JACC study, Japan', *Sleep*, 27/1 (2004): 51-4; D.L. Wingard and L.F. Berkman, 'Mortality risk associated with sleeping patterns among adults', *Sleep*, 6/2 (1983): 102-7; A.I. Qureshi, W.H. Giles, J.B. Croft and D.L. Bliwise, 'Habitual sleep patterns and risk for stroke and coronary heart disease: a 10-year follow-up from NHANES I', *Neurology*, 48/4 (1997): 904-11; S.R. Patel, N.T. Ayas, M.R. Malhotra, et al., 'A prospective study of sleep duration and mortality risk in women', *Sleep*, 27/3 (2004): 440-44; D.F. Kripke, L. Garfinkel, D.L. Wingard, et al., 'Mortality associated with sleep duration and insomnia', *Archives of General Psychiatry*', 59/2 (2002): 131-6; N.T. Ayas, D.P. White, W.K. Al-Delaimy, et al., 'A prospective study of self-reported sleep duration and incident diabetes in women', *Diabetes Care*, 26/2 (2003): 380-84, N.T. Ayas, D.P. White, J.E. Manson, et al., 'A prospective study of sleep duration and coronary heart disease in women', *Archives of Internal Medicine*, 163/2 (2003): 205-9; D.F. Kripke, R.N. Simons, L. Garfinkel and E.C. Hammond, 'Short and long-sleep and sleeping pills. Is increased mortality associated?', *Archives of General Psychiatry*, 36/1 (1979): 103-16.

Studies repeatedly show that 6.5-7.5 hours of sleep on an average weeknight is associated with the lowest risk of all-cause mortality.[6] In one large study, controlling for demographic characteristics, health behaviours, prior health conditions and medication use, it was shown that sleeping either a long or short amount increases the relative risk of all-cause mortality by up to 40 per cent.[7] Interpretation of the findings of greater mortality with long-sleep durations is controversial. The studies are often based on self-reported sleep time, and some people, perhaps those with unrecognized health conditions, report sleep duration based on the hours they spend in bed, rather than actual sleep time. Long-sleep duration may also be a marker for sleep apnea, a sleep disorder that is associated with breathing pauses that profoundly fragment sleep. However, since the relationship between long-sleep and poor health is so commonly observed, we suggest that there may be something more fundamental, such as socioeconomic factors or individual autonomy, underlying the relationship that is more important than measurement error or confounding comorbidities.

Relationship between Sleep Duration and Socioeconomic Factors

To support our argument, we are interested in how socioeconomic factors are correlated with short, mid-range, and long-sleep durations. In 2005, Hale introduced a model in which sleep is conceived of as having two suboptimal categories (short and long-sleep duration) and one optimal sleep duration (mid-range sleep duration).[8] This is in contrast to previous models of sleep in which

[6] Tamakoshi and Ohno, 'Self-reported sleep duration as a predictor of all-cause mortality: results from the JACC study, Japan'; Wingard and Berkman, 'Mortality risk associated with sleeping patterns among adults'; Kripke, et al., 'Mortality associated with sleep duration and insomnia'.

[7] Kripke, et al., 'Mortality associated with sleep duration and insomnia'.

[8] Hale, 'Who has time to sleep?'.

sleep is allowed to be a continuous variable.[9] This difference in classification is an improvement in that it not only better fits with the empirical relationship between sleep and health described above, but also because it better suits a plausible view of the nature of the decision to sleep.

Description studies using a curvilinear model of sleep duration There are only a few studies that have explicitly investigated social factors and their relationship to short, mid-range, and long-sleepers.[10] Hale[11] uses time-use data from four cross-sectional datasets[12] and estimates a multinomial logistic regression equation on the amount of sleep reported for the 24-hour period of the time-use diary. The three outcome categories are short-sleep (<6.5 hours), mid-range sleep (6.5-8.5 hours), and long-sleep (>8.5 hours). Hale controls for factors such as calendar year, marital status, gender, educational status, employment, minutes of television watched, age and age-squared. In a similar set of analyses, Hale and Do[13] use survey data from the *National Health Interview Study* (NHIS). In these models, they include additional variables to the ones above including race and neighbourhood characteristics. In the third analysis, Adams[14] used data from almost 1,500 respondents in the *Office of National Statistics Omnibus Survey* collected in 1999 in the United Kingdom. Rather than modelling the three categories of sleep duration separately, as done by Hale, Adams used a logistic regression in which the outcome category was a dichotomous variable representing either 6.5-8.5 hours of sleep or not (<6.5 or >8.5).

[9] C.D. Jefferson, C.L. Drake, T. Roehrs and T. Roth, 'Sleep habits in healthy normals', *Poster Presentation at the Annual Meetings of the Associated Professional Sleep Society* (2005); D.S. Lauderdale, K.L. Knutson, L.L. Yan, et al., 'Objectively measured sleep characteristics among early-middle-aged adults: the CARDIA study', *American Journal of Epidemiology*, 164/1 (2006): 5-16; P.J. Moore, N.E. Adler, D.R. Williams and J.S. Jackson, 'Socioeconomic status and health: the role of sleep', *Psychosomatic Medicine*, 64/2 (2002): 337-44; J.E. Biddle and D.S. Hamermesh, 'Sleep and the allocation of time', *The Journal of Political Economy*, 98/5 (1990): 922-43.

[10] Hale, 'Who has time to sleep?'; L. Hale and D.P. Do, 'Sleep and the city: an analysis of sleep duration, race, and neighborhood context in the NHIS', *Presented at the Annual Meetings of the Population Association of America* (April 1 2006); J. Adams, 'Socioeconomic position and sleep quantity in UK adults', *Journal of Epidemiology & Community Health*, 60/3 (2006): 267-9.

[11] Hale, 'Who has time to sleep?'.

[12] J. Robinson, S. Bianchi and S. Presser, 'Family interaction, social capital, and trends in time use (FISCT) 1998-1999' (2001); J. Robinson and G. Godbey, *Time for Life: The Surprising Ways Americans Use Their Time* (University Park: Pennsylvania State University, 1999).

[13] Hale and Do, 'Sleep and the city: an analysis of sleep duration, race, and neighborhood context in the NHIS'.

[14] Adams, 'Socioeconomic position and sleep quantity in UK adults'.

Results of curvilinear model of sleep duration Less education is associated with both short and long-sleep duration.[15] One study finds that people without a high school degree are both more likely to be short-sleepers (OR=1.43, p<0.01) and long-sleepers (OR=1.61, p<0.001) on the weekdays, relative to people with a college degree.[16] The NHIS data show that individuals with a college degree are 21 per cent (p<0.001) less likely to be short-sleepers, and 46 per cent (p<0.001) less likely to be long-sleepers than those with a high school degree.[17] The Adams study found this to be true of women, but not statistically significant for men.[18]

Unemployment and retirement are both associated with increased risks of long-sleeping. Both Hale studies found that people who are unemployed and retired have an increased likelihood of long-sleeping on the weekdays compared to people who work <36 hours in the week (OR=1.43, p<0.05 and OR=1.90, p<0.01[19] and OR=1.91, p<.001 and OR=1.31,[20] p<.05, for unemployment and retirement, respectively).

Marital status is also correlated with sleep duration in a non-linear manner. On the weekdays, relative to being married, separated/divorced (OR=1.29, p<.05), widowed (OR=2.04, p<.001), and single people (OR=1.61, p<.001) are more likely to be short-sleepers compared to married people.[21] Hale and Do[22] find similar relationships in the NHIS in which widowed and divorced people are more likely to be short-sleepers compared to married people controlling for other social characteristics. They also find that single people are more likely to be long-sleepers.[23]

Hale and Do found that controlling for individual characteristics such as education, obesity, smoking behaviours, short- and long-sleep durations are more common in black Americans than in white Americans (OR=1.54, p<.001 and OR=1.57, p<.001 for short and long-sleeping respectively). A portion of the increased risk of short-sleep duration for blacks can be explained by adding in controls for neighbourhood characteristics (i.e. living in the inner city), but this does not explain all of the effect.

[15] Hale, 'Who has time to sleep?'; Hale and Do, 'Sleep and the City: An Analysis of Sleep Duration, Race, and Neighborhood Context in the NHIS'; J. Adams, 'Socioeconomic position and sleep quantity in UK adults'.

[16] Hale, 'Who has time to sleep?'.

[17] Hale and Do, 'Sleep and the city: an analysis of sleep duration, race, and neighborhood context in the NHIS'.

[18] Adams, 'Socioeconomic position and sleep quantity in UK adults'.

[19] Hale, 'Who has time to sleep?'.

[20] Hale and Do, 'Sleep and the city: an analysis of sleep duration, race, and neighborhood context in the NHIS'.

[21] Hale, 'Who has time to sleep?'.

[22] Hale and Do, 'Sleep and the city: an analysis of sleep duration, race, and neighborhood context in the NHIS'.

[23] Ibid.

Non-linear relationships are also found between sleep duration and being overweight and smoking patterns. Overweight people are 26 per cent ($p<0.001$) more likely to be short-sleepers and 14 per cent ($p<0.05$) more likely to be long-sleepers than their normal weight counterparts.[24] In addition, current smokers have a 25 per cent increased risk of being a short-sleeper and a 22 per cent increased risk of being a long-sleeper relative to their non-smoking peers.[25]

From the Descriptive to the Explanatory

For the purposes of this paper, then, there are two sets of models at play. One set of models is descriptive and relates to the empirical findings detailed above. These descriptive models describe the relationship between sleep duration and health. The other set of models, or views, is explanatory, in that it seeks to describe the nature of the relationship between the subject's reasoning and sleep. These views seek to characterize the nature of the option to sleep. In our case, we will examine the choice view, which proposes that one can *choose* to sleep, and introduce the autonomy view, which proposes that sleep tracks autonomy. We argue below that the curvilinear model, which we understand to better describe the data, fits more comfortably with the autonomy view than with the choice view. Unfortunately, as with many studies of this nature, both the choice view and the autonomy view can explain the findings in either descriptive model. The difficulty, we will argue, is that the kind of choosing that underwrites the choice view is either inconsistent or incoherent.

Look at the linear model first. On the linear model (Figure 11.1) sleep is understood across a 24-hour horizon, and it is thought that the only negative effects of sleep can result from a lack of sleep. On this view, the optimal amount of sleep is the amount that a body would naturally get, provided that a subject does not interfere with the sleep through some set of decisions (alarm clocks, late nights, and so on).

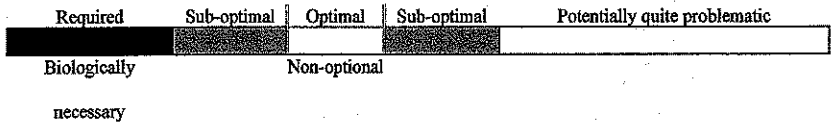

Figure 11.1 The Linear Model

As we explained above, there is another descriptive model that reveals different relationships between subjects, health outcomes, and sleep. This model, pioneered

[24] Ibid.

[25] Ibid.

by Hale, we are calling the curvilinear model (Figure 11.2), because it stipulates that human adults need a certain range of sleep; and that sleep that either falls short of or extends beyond this range of sleep is sub-optimal. In the past, this has been understood as primarily a methodological innovation, but we assert here that it is a methodological innovation with significant descriptive and explanatory force. That is, it not only better describes the relationship of sleep to health factors, but also points to a particular view of how the subject is related to his decision with regard to sleep.

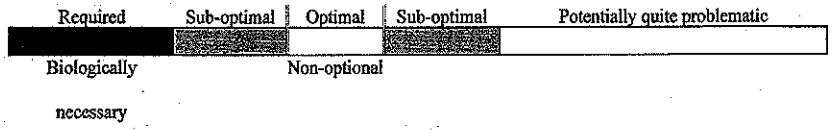

Figure 11.2 The Curvilinear Model

The Choice View

Jeff Biddle and Daniel Hamermesh, both economists, find that the amount of time that one sleeps is 'inversely related to both the wage and time spent in the labour market'.[26] They rightly point out that on most prior models, sleep time was understood primarily as a biological given—a set aside. What they find, however, is that many of our other daily decisions can cut into our sleep time, such that we can effectively choose our sleep schedules.[27] They draw from their research the conclusion that 'sleep is subject to consumer choice and is affected by the same economic variables that affect choices about other uses of time'.[28]

What Biddle and Hamermesh suggest is that one chooses sleep duration based on the value of other possible time-consuming activities. So, one might fill one's days with only a few hours of work, for instance, but this work might be particularly rewarding. Or one might fill one's evenings with family time, and this too might be more rewarding than the sleep that one gets. On Biddle and Hamermesh's consumer choice view of sleep, decisions to sleep are made in such a way that work and other life choices effectively *crowd out* sleep. This view—the choice view (See Figure 11.3)—proposes that the subject's other valued interests

[26] Biddle and Hamermesh, 'Sleep and the allocation of time'.

[27] 'People spend close to one-third of their time sleeping, but it is wrong to view these unconscious hours as a predetermined deduction from their scarce allotment of time. We have shown that at least part of sleep time is a reserve on which people can draw when economic circumstances make other uses of time more attractive. Our results suggest that it is not unusual for people's average daily sleep time to differ by as much as one hour at different times in their adult lives' (Biddle and Hamermesh: 1990).

[28] Ibid.

impinge on the sleep-time of the subject, such that, if the subject so chooses, he can take precious time away from his sleep to engage in other activities.

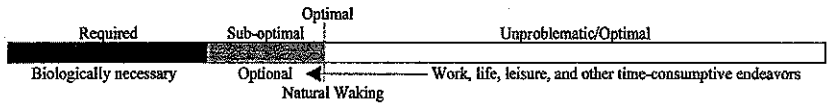

Figure 11.3 The Choice View

Criticism of the Choice View

There is a trivial sense in which one does not choose the amount of time that one sleeps. Ask an insomniac if he has the choice to sleep and you will elicit guffaws. Trivially, then, saying that one has a choice to sleep is like saying that one can will oneself to sleep. This alone might be enough to condemn the choice view, since the empirical data measure the amount of time sleeping and not the amount of time spent trying to get to sleep. But we might also read the position more charitably, and propose that the choice view suggests not that subjects choose the amount of time that they sleep, but only the entry and exit points of their sleep, when they go to bed and when they wake up.

The choice view could withstand the criticism that one cannot will oneself to sleep if framed in this way. Advocates of the view might say, for instance, that psychologically or biologically we have little control over our systems, which is similar to many other choices that we make. Just as we can choose to eat a box of doughnuts but not whether we will get indigestion; just as we can choose to try and get pregnant, but not whether we will, in fact, get pregnant; so too can we choose to try and sleep, but not whether we will, in fact, get to sleep. What we choose, on this view, is to go to bed or to wake at a set hour, not how many hours we sleep. So long as we are not burdened with a pathology like insomnia or sleep apnea—which is a pathology affecting the inside span of our entry and exit points—it makes sense to speak of sleep as a choice. Just as Biddle and Hamermesh suggest, we can shave off hours from our normal sleep schedule to make room for other activities by setting the bedposts of our sleep.

One thing that should be clear, however, is that the choice view depends upon the notion that the subject maintains control of both these entry and exit points. Bodies that sleep for *longer* periods of time than a subject desires—longer periods of time than the body needs—would, on this view, depend upon a body's proclivity to wake on its own, and not on any choice that a subject might make. If a subject plans to head to bed at 12:00, thinking that he will wake naturally by 8:00, but then wakes only at 10:00, such a sleep cycle is unchosen. He has overslept, which he did not choose. In this case, he has long slept.

What the curvilinear model stipulates is that there is such a thing as long-sleeping. If there is such a thing as long-sleeping, then there must be something

against which the sleeping is deemed to be long. (Sleeping is deemed to be long when the body sleeps longer than the body needs. Here, long-sleeping is presumed to be unnatural.) And, if there is something against which the sleeping is deemed to be long, then it would appear that it is not the case that some portion of the population chooses what time to wake up.[29] If these people end up sleeping long, then they only *end up* sleeping long, and do not *choose* to sleep long. People can only, reasonably, choose to sleep short, which they can do by placing their will ahead of themselves at the beginning of the night: by asking their partners to jostle them as they snooze or by setting the alarm. As the curvilinear model demonstrates, there are some cases in which people long sleep. Long-sleeping can be a choice no more than the choice to add five inches to a rope of a given length might be a choice.

We might try to remedy the definition of the choice view by employing the suggestion that what we mean by 'choosing' one's entry and exit points is only that one 'allows oneself' to long-sleep. We sometimes speak of our choices this way. But if we do this, then this use of 'choosing' should apply in all instances captured by the choice view, and we can see that this is plainly false. For if this were our meaning when using the description 'choose', choosing to short-sleep would make little sense. We would then also speak of short-sleeping as a sleep duration that we 'just allow'. And this too seems impossible. When we speak of short-sleeping, if we are to speak of choosing short-sleeping and not of pathological short-sleeping (like insomnia), we suggest clearly that we have set premature entry and exit points. What it would mean to allow ourselves to short-sleep would be *to not set up* entry and exit points, but rather just to let sleeping happen as it may. So, either we are not talking about the same kind of 'choice' in the case of both long-sleeping and short-sleeping, and the choice view is inconsistent; or we *are* talking about the same kind of 'choice', which cannot be a choice at all for long-sleepers, and the choice view is incoherent.

And so, the choice view, if it is to withstand the findings of the curvilinear model and the existence of 'long-sleeping', is flawed. There is therefore also a non-trivial sense in which one does not choose to sleep.

The Autonomy View

We are then stuck in a position where we must find another explanation for the decision-making view best associated with sleeping. A reasonably clear position is available to us in the broad body of literature generally associated with talk of autonomy, or self-governance. This body of literature is too broad to justly

[29] Remember, the choice view seeks to explain the decision-making behind the data; and so in this sense is also descriptive. It does not propose that one cannot, given knowledge that one's health might be deleteriously affected by long-sleeping, choose to sleep in shorter increments. Rather, it proposes that sleep duration can be understood as a choice; which, in the case of long-sleeping, it cannot. One is effectively always oversleeping.

summarize in a short paper of this nature, but the central idea is that the truly autonomous agent maintains the possibility of freely willing and setting for himself life projects, policies, and practices; and is not coerced or pressured into positions by external forces. One of the most widely accepted ways in which one might be said to acquire this sort of autonomy is by gaining an education. This is the kind of autonomy to which we are referring: autonomy as self-determination.

On our autonomy view, unlike the choice view, it is not the case that the subject selects the entry and exit points of sleep time like one might choose between wine or beer, but rather chooses the *parameters* of sleep time according to a set of life projects in which she is engaged or plans to engage. The autonomy view, we propose, both better explains the data and serves to better characterize the kind of reasoning that goes into decisions about sleep time. Less education, unemployment, and marital status, for instance, are all positively associated with longer and less healthy sleep durations.

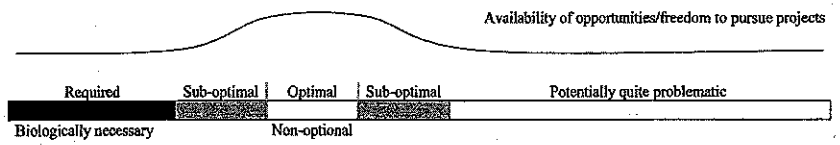

Figure 11.4 The Autonomy View

Due to space limitations, we cannot present the full conceptual argument for the autonomy view here, but do so in a longer version of this paper.[30] Instead we will have to rely on the empirical data presented above to support this claim. In effect, however, we argue elsewhere that reasoning about sleep always maintains a purposive structure, such that decisions about sleep are not appropriately understood as tradeoffs, but rather as purposeful actions taken in order to fulfil projects.[31] In other words, the discrepancy between the views can be explained, in part, by the kind of reasoning that goes into decisions about sleep. On the choice view, decisions about sleep are made via valuations of hours that could either be spent sleeping or doing something else. If I set my entry time at 12:00 and my exit time at 8:00, I am making value decisions based on tasks that I need to accomplish at given times during the day.

[30] B. Hale and L. Hale, 'Strange bedfellows: autonomy, ethics, and the sleep of reason', *The annual conference of the Society for Applied Philosophy: The Philosophy of Public Health* (Manchester University, 2006).

[31] Hale and Hale, 'Strange bedfellows: Autonomy, ethics, and the sleep of reason'; B. Hale and L. Hale, 'The Decision to Sleep' (forthcoming).

> I'll be at work until 7:00; at the gym from 7:00 until 8:00; out to dinner from 8:00 until 9:00; and at the bar from 9:00 until 12:00. At that point, I'll set my entry point of sleep for 12:00, because that is when I can schedule sleep.

On the autonomy view, the reasoning works according to projects. I do not schedule my sleep according to entry and exit points, but according to what I need of sleep as a whole. In this sense, I say:

> I need roughly seven hours of sleep; and given what I know about my sleep habits; and given what I know about what I need to function at a minimally productive level, if I go to bed at 12:00, I should set my alarm for no earlier than 7:00 in the morning. Or, if I know that I must wake at 6:00, but need at least seven hours of sleep, I must set my bedtime for approximately 11:00.

From the standpoint of what one *does*, this may not appear much different than setting the entry and exit points of sleep. But from a practical reasoning standpoint, this kind of logic has an important practical role to play.

Implications of the Position

The explanatory view that underwrites sleep models has significant implications for the normative conclusions that emerge from these models. For if it is true that sleep tracks autonomy, then it is probably not true that one ought to encourage citizens to value sleep more than they do. Instead, what is probably true is that one ought to encourage *practices* and *projects* that will then promote optimal sleep. In this case it would appear that—because one cannot *choose* to sleep optimally, but instead only sleep optimally when life does not throw obstacles in the way; or sleep optimally only when sleep is for the purpose of some other end; or when opportunities are available to subjects—the correct interpretation of the data is to suggest that, if one desires to improve health by encouraging sleep, one can only do so by ensuring that opportunities for freely willing life projects are distributed as widely as possible.

Moreover, this conclusion suggests that the domain of the public health practitioner is considerably broader than it might at first appear. It is not, in other words, that the public health practitioner can be concerned just with healthy sleep habits, but instead must be concerned with the whole life package. If Hale's curvilinear model suggests that sleep tracks autonomy; and if the objective of the public health official is to promote the health of the public; and if the public is not as healthy as it could be because it is not sleeping optimally; then the following normative conclusion might naturally follow: citizens burdened by other concerns quite independent of their sleeping, but that nevertheless impinge on their sleeping, ought to be *relieved of these concerns*. One must provide opportunities for citizens

to better their lives. We cannot argue for this here, but that is a potential implication of this argument.

Conclusion

Our strategy has been first to show that a curvilinear model that recognizes both short and long-sleeping is better suited to the public health data than a linear model. We employed this observation to argue that the choice view is incoherent, which we suggested is revealed by the very idea that there is such a thing as long-sleeping. While it may clearly be the case that one could choose something like short-sleeping, it seems impossible, ignoring the possibility of barbiturate or sleeping pill consumption, to *choose* to long-sleep. Therefore, we suggested, the choice view is flawed; at least so far as explaining the data is concerned. Moreover, we suggested that the choice view attempts to characterize sleep as a choice, where this is clearly both trivially and nontrivially false. One cannot choose to sleep any more than one can will oneself to sleep; and one cannot choose the parameters of sleep time without being either inconsistent or incoherent.

We then suggested that the only coherent position is one that does not conceive of sleep as a choice, but that conceives of the entry and exit points of sleep as a choice, where these are parameters that we can set without the guarantee that our bodies will cooperate. So, we set our alarms, say; and we go to bed at a certain time. That is the kind of choosing that we can do. But what's unique about this kind of choosing is that it does not come with the one-off value characterization: choosing to sleep is not a consumer choice like choosing between wine or beer. Sleep is almost always engaged in for the *purpose of* something else. One says: 'I must get some sleep *in order that* I wake refreshed tomorrow.' 'I must go to bed *in order that* I work effectively …' and so on. This suggests that sleep is almost always purposeful, and tied, in a way, to all of our other ends—our life projects. So our choosing with regard to sleep, for instance, isn't really choosing sleep at all. It's choosing the parameters of our sleep time, always with our purposes in mind.

Chapter 12
Categories of Constraint and Avenues of Freedom: Proposing Collective Agency for Addressing Problems of Obesity

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Obesity and Agency

Obesity is a problem of epidemic proportions, affecting both developed and developing countries. The spread of technology, the rise of global commerce, the changing nature of work and shifts in family social roles are among the factors blamed for changing the food supply and daily activities of people all over the world. In the United States, one of the fattest countries in the world, an estimated 66 per cent of its residents are overweight, and of those, about 32 per cent are obese.[1] Most health experts also blame the problem on sedentary lifestyles and diets that include mostly energy-dense (high-fat, high-sugar, high-calorie) food. In short, we eat too much and don't exercise enough.

This seems like a simple problem. If excess calorie intake is the problem, then we should simply reduce the number of calories we consume and burn more of them. In short, we should eat less and exercise more. Plans offering ways to adjust our daily diet by restricting or eliminating certain foods abound; however, these regimens are hard to follow, and lifestyle changes are even harder to maintain over the long term.

Why should some extra poundage among the citizenry be a source of worry? For one thing, there are many studies linking obesity to increased risk for type-II diabetes, heart disease, some cancers, arthritis and other health problems.[2] There is also a dimension to the obesity problem that merits philosophical investigation.

[1] For extensive data on obesity rates in the US, see the National Center for Health Statistics website: http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overwght99.htm#Table%201 (accessed July 2007).

[2] For one of many sites with information about health risks associated with obesity, see: http://www.surgeongeneral.gov/topics/obesity/calltoaction/fact_consequences.htm (accessed July 2007).