

## LETTERS TO THE EDITOR

## Segmented Sleep in Preindustrial Societies

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I was intrigued to learn of the study conducted of three preindustrial cultures, without access to electric lighting, by a team of researchers led by Dr. Jerome Siegel in an effort to determine how humans slept “before the modern era.” Titled “Natural Sleep and Its Seasonal Variations in Three Pre-industrial Societies,” it appears in the November issue of *Current Biology*.<sup>1</sup> Having written on the predominance of “segmented sleep” in preindustrial Europe,<sup>2</sup> I was particularly surprised by the discovery reported by Yetish et al.<sup>1</sup> that the members of all three of these equatorial societies did not “regularly awaken for extended periods in the middle of the night.” In short, these individuals did not experience a “bimodal sleep pattern.” The authors conclude, “by extension,” that this pattern was “probably not present before humans migrated into Western Europe. Rather, this pattern may have been a consequence of longer winter nights in higher latitudes.” Not only is this broad inference highly questionable, but significant historical and ethnographic evidence also exists to suggest the prevalence of segmented sleep in preindustrial equatorial cultures.

First, segmented sleep was common across preindustrial Europe throughout the year, not just during long winter nights. Whether in northern England or southern Europe, this pattern of sleep reflected, at most, the limited effect of seasonality, at least in countries located south of northern Scandinavia where seasonal variations in the availability of natural light were pronounced. Even in the “siesta cultures” of Spain and Italy, seasonal variations were modest despite reliance on napping to combat the intense midday heat. During the summer months, some men and women, to be sure, were apt to work or socialize later at night, but longer hours of daylight ordinarily extended sleep onset and, in turn, the time of “first rising” by at most 1 h. As in many preindustrial cultures, sleep onset depended less on a fixed timetable than on the existence of things to do. In the winter, whether for conviviality or work, preindustrial households remained active well after sunset, not retiring until 21:00 or 22:00, or later when visiting with neighbors. People relied on primitive illuminants, such as rushlights and oil lamps, or on the natural light of the moon and stars on clear nights, even to perform unskilled chores such as chopping firewood.<sup>3</sup>

Second, it is clear that biphasic sleep was not unique to Western households. Instead, it occurred well beyond the bounds of Europe and North America in other cultures and continents, including the Middle East, Africa, South Asia, Southeast Asia, Australia, and Latin America, thereby heightening the likelihood that throughout the preindustrial world this form of sleep was not at all uncommon, including in equatorial cultures.<sup>4</sup> The French priest André Thevet, on traveling to Rio de Janeiro, Brazil in 1555, reported that the Tupinamba Indians ate whenever they had an appetite, “even at night after their first sleep they get up to eat and then return to sleep.”<sup>5</sup> In the early 19th century, residents of Muscat, the capital of Oman, were said to retire early, lying “down before

10 o'clock,” so that “before midnight their first sleep” was “usually over.”<sup>6</sup>

More recently, ethnographic evidence from the late 19th century to the latter half of the 20th century indicates that numerous non-Western cultures not exposed to artificial lighting still experienced “first” and “second” sleep, from Surinamese Maroons on the northeastern coast of South America<sup>7</sup> to the Asante and Fante on the West African coast, for whom the phrase in their native Tshi language “woadá ayi d. fā” signifies “they lie in the first sleep,” whereas “wayi (or wada) d. biakō” reads “he has slept the first part of the night.”<sup>8</sup> Villages of the G/wi in Africa were found to be alive at night with newly awakened adults and children. Like the Ju/’hoansi studied by the team led by Dr. Siegel, the G/wi are among the San peoples who are hunter-gatherers in southern Africa. Based on long intervals of time living with the G/wi between 1958 and 1964, the remarks of the Australian anthropologist George B. Silberbauer are at the least suggestive: “A G/wi camp never has an uninterrupted night’s sleep. There is always someone awake, adding wood to the household fire, eating a snack, seeing to a child, listening to a strange noise in the bush, or keeping watch if dangerous animals are near. For this reason, the divisions of the night are almost as important as those of the day.”<sup>9</sup> The Tiv, by contrast, are subsistence farmers in central Nigeria, who, according to a field study published in 1953, employed the terms “first sleep” and “second sleep” in their own language as traditional intervals of time,<sup>10,11</sup> much as a folklorist discovered among the Sinhalese in Ceylon in the late 1800s: “The time when a man awakens after his first sleep is rather indefinite, varying with the habits of the sleeper,” though it normally fell before midnight. The conclusion of one’s first sleep, he added, was “a common expression” for marking time.<sup>12</sup> A British anthropologist wrote in 1895 of the Woolwa people in Central America, “Frequently at night, after the first sleep, the men would gather round the fires from their respective quarters in the lodge, and, as they warmed themselves in the flames from the chill of the night air, would enjoy some yarn with a quiet chuckle.”<sup>13</sup>

As for preindustrial Europeans, so too for these peoples, awakening shortly before midnight or at a later hour was thought completely natural. What, of course, all these cultures shared with early societies in Europe and, too, with the subjects of a well-known study conducted in the early 1990s at the National Institute of Mental Health by Dr. Thomas Wehr,<sup>14</sup> was an absence of artificial illumination. As I have recently written at length, consolidated sleep to which the industrialized world aspires, if not always successfully—due perhaps to the persistence of this once dominant pattern—is for Western societies a remarkably youthful form of sleep, a product not of the primeval past but of forces grounded in technology (artificial illumination) and shifting cultural attitudes toward sleep over the course of the Industrial Revolution.<sup>4</sup> This is not to argue that segmented sleep has been the predominant pattern

of sleep among all preindustrial peoples in the non-Western world. The research of Dr. Siegel and his colleagues offers a welcome, albeit singular, counterpoint that future studies will hopefully help to clarify.

#### CITATION

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