

Question

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Corresponding author:

Daniel B. Kay; Email: daniel_kay@byu.edu

What is the historical relationship between psychology and sleep science?

Amy R. Wolfson¹, Kate Homer², Jared Cruickshank², Carter Chugg², Elijah Davis², Nathan Boris², Alyssa Larson², Kara M. Duraccio²  and Daniel B. Kay² 

¹Department of Psychology, Loyola University Maryland, Baltimore, MD, USA and ²Department of Psychology, Brigham Young University, Provo, UT, USA

Abstract

Psychologists and psychological research have shaped sleep and circadian science for over a century. Yet, psychology has not fully embraced sleep as a core area of inquiry, and sleep medicine has not distinctly acknowledged the foundational role psychology plays in understanding sleep and circadian rhythms. This Question Paper invites submissions exploring psychology's profound impact on the study, measurement and intervention strategies in sleep and circadian science, as well as reciprocal influences. Manuscripts may include historiographies of key contributors, laboratory milestones, theoretical advancements and methodological innovations within a historical context. We aim to capture the full scope of sleep psychology from its origins to a vision of its future.

Context

Ancient origins of sleep psychology

Inquiry into the psychological aspects of sleep dates back to ancient civilizations, including Old Testament references. Over 5,000 years ago, the Epic of Gilgamesh raised psychological questions about sleep, including the value of sleep versus wakefulness, the role of dreams and the influence of the human will in our ability to maintain wakefulness. Similarly, ancient philosophers, who influenced the founding of psychology, including Plato and Aristotle, engaged in discussions regarding sleep's psychological dimensions. Plato, for instance, considered sleep as a state with moral implications, where virtuous living led to “sweet sleep,” while Aristotle's treatise on sleep viewed sleep as having no intrinsic value, an attitude echoed in a number of modern discussions on sleep. Later, key philosophers who influenced the modern founding of psychology, such as René Descartes, John Locke and Gottfried Wilhelm Leibniz, debated sleep from the perspective of consciousness (Hill 2004). Descartes posited that thinking continues during sleep, while Locke argued that dreamless sleep represents an absence of thought. Locke also discussed the importance of sleep in child rearing (Locke 1693). It could be argued that these early philosophical ideas set the stage for psychology's ultimate scientific inquiry into sleep in the 19th and 20th centuries. However, few scholars have written about psychology's original role in the study of sleep.

Birth of modern sleep psychology

By the mid-1800s, early attempts to study the psychology of sleep were underway. Blanchard Fosgate's work, *Sleep Psychologically Considered*, explored the mind's activity during sleep, emphasizing its relationship with memory, irritability and consciousness (Fosgate 1850). Fosgate's insights laid the groundwork for later, more systematic studies. Alexander Bain discussed sleep in relation to bodily rhythms, fatigue and mental and physical restoration (Bain 1855; Webb 1961). In the late 19th century, experimental psychology emerged as an academic discipline. Wilhelm Wundt, often considered the founder of experimental psychology, was skeptical of psychological theories of dreams and sleep and excluded sleep from his research focus, dismissing it as a physiological rather than psychological phenomenon (Wundt and Titchener 1910). In contrast, William James, an early American psychologist, recognized sleep as a vital process with profound psychological implications and considered sleep in most chapters of his seminal textbook *Principles of Psychology* (James 1905; 1907). In fact, his student, Mary Whiton Calkins (one of the first women in psychology), conducted some of the first empirical studies on dreams, framing sleep as an area of psychological and scientific investigation (Calkins 1893; Weed *et al.* 1896).

While Sigmund Freud's theory of dreams generated strong interest in the study of dreams among psychologists in the early 1900s, psychologists made early contributions to other areas of sleep science including the first human sleep deprivation study conducted by Patrick and Gilbert

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(Patrick and Gilbert 1896), investigations into the effects of caffeine on psychological functioning and sleep conducted by Harry Hollingworth (Hollingworth 1912), and significant early contributions in the areas of insomnia, behavioral treatment for pediatric sleep disorders, dream psychology and hypnotic sleep by leading psychologists including Lighter Witmer, Hugo Münsterberg and John Watson (McReynolds 1997; Münsterberg 1915; Watson 1928). These contributions demonstrate the breadth and early contributions of psychology to sleep and circadian science.

The role of psychologists in shaping sleep science

The mid-20th century saw a shift in the study of sleep with the discovery of rapid eye movement (REM) sleep by Eugene Aserinsky and Nathaniel Kleitman (Aserinsky and Kleitman 1953). This finding, along with William Dement's work linking REM to dreaming, generated significant interest in sleep science (Dement and Kleitman 1957). During this time, although less acknowledged, psychologists played a critical role in shaping the field. At the inaugural 1961 meeting of what would become the Association for the Psychophysiological Study of Sleep (APSS), nearly half of the attendees had a psychology background (Webb 1961). Early work focused on dream psychology, the behavioral and physiological aspects of sleep and psychologists contributed heavily to developing standardized methods, such as polysomnography scoring. Key psychologists in these early years include Alan Rechtschaffen, Wilse Webb, David Foulkes, Peretz Lavie (Witse Webb's student) (Lavie 2024), Joe Kamiya, Rosalind Cartwright, Peter Hauri, James Walsh and others. For example, Webb's first sleep paper, *Antecedents of Sleep*, was published in the *Journal of Experimental Psychology* (1957) and Kamiya's first sleep publication was a chapter on the behavioral, self-reported and physiological aspects of drowsiness and sleep (Kamiya 1961; Webb 1957).

Preserving the history of sleep psychology and its multidisciplinary contributions to sleep science

As sleep medicine grew in prominence in the 1980s, the focus on psychological aspects of sleep began to wane. Despite this, psychologists such as Rosalind Cartwright continued to emphasize the importance of understanding the 24-hour mind and contributed foundational research on the psychological aspects of sleep (Cartwright 2010). The early scholarship of Drs. Cartwright, Webb and Lavie, along with many others in the field, merit documentation and discussion. We encourage their work be contextualized and included in the history of psychology, and in the history of what we have come to refer to as "sleep science." Many psychiatrists, neurologists, neuroscientists and early psychophysicists, although not psychologists, have made significant contributions to the psychological science of sleep and circadian rhythms, and documentation of their historical contributions is also critical to the field of sleep psychology.

We invite papers that offer insights into:

- Historiographies of pioneers in sleep psychology including scholars who have contributed sleep and circadian insights to the field of psychology, contributed psychological insights to sleep and circadian science or who have shaped foundational theories and practices in sleep psychology.
- History of key psychological areas of inquiry that influence the development and evolution of sleep and circadian science

(e.g., from emotion regulation to neuroscience to multi-measure methodological approaches).

- History of how psychological assessment methods (e.g., self-report scales, behavioral observations, cognitive performance measures) advanced sleep research methodologies.
- History of psychological interventions (e.g., CBT-I, mindfulness, hypnosis, relaxation) specifically designed to improve sleep health and address sleep disorders.
- History of how developmental psychology has contributed to understanding sleep needs, patterns and challenges across different life stages.
- History of dream psychology and how psychological theories and methods have advanced the study of dreaming and its relationship to sleep quality and mental health.
- History of how psychological insights inform our understanding of circadian regulation and its impact on sleep behavior and mental health.
- Review of developments in psychological models of sleep that explain the onset, maintenance and treatment of common sleep disorders.
- Historical commentaries on how sleep psychology, social psychology and cultural beliefs impact sleep behaviors, attitudes toward sleep and sleep health disparities.
- The historical developments of ethics in psychology and their role in sleep science.
- Historical contributions from different fields within psychology to sleep and circadian research (e.g., developmental, clinical, neuroscience, etc.).
- Perspectives on future directions for sleep psychology to help guide its success.
- History of how technological advancements, from early electrophysiological measures to modern wearable devices, have influenced psychological approaches to studying and understanding sleep and circadian rhythms.

How to contribute to this question

If you believe you can contribute to answering this Question with your research outputs, find out how to submit them in the Instructions for authors. This journal publishes Results, Analyses and Impact papers. Additional content such as preprints, posters, oral presentation slides and other forms of "grey literature" can be submitted to the Community. Questions will be closed when the editors agree that enough has been published to answer the Question, so before submitting, check if this is still an active Question. If it is closed, another relevant Question may be currently open, so review all the open Questions in your field. For any further queries, check the information pages or contact this email sleeppsychology@cambridge.org.

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