IN Dreams BEGIN discoveries

Revisiting a century-old essay—still cited in the scientific literature—in which one noted Penn scholar dissected the “problem-solving” dreams of two others and showed how they slept their way to insights that eluded their waking selves.

The 19th century was not just an era of industrial revolution, thrilling inventions, warfare on an unprecedented scale, and relentless empire building. It was also a bully time for dreaming. To put it another way, 19th-century humans were so productive that even their dreams bore fruit. The Scottish-born writer Robert Louis Stevenson dreamt of a fugitive who quaffed a potion and morphed into a bestial version of himself; this glimpse provided the basis for an unforgettable novella, Dr. Jekyll and Mr. Hyde. The German chemist August Kekule dreamt of a snake that seized its tail in its mouth; on awakening, Kekule interpreted this striking image as a sign that benzene had a ring-like molecular structure—an insight that transformed organic chemistry. And at Penn, a young Latin and philosophy teacher named William Romaine Newbold C1887 gathered and examined his colleagues’ problem-solving dreams in an article that is still regularly cited.

Penn’s contribution to the topic of fecund dreams can be traced to a widespread crisis of faith. As the geology of Charles Lyell and the biology of Charles Darwin sank in, casting grave doubt on the Bible’s literal truth, intelligent men and women had to reassess their beliefs. The Victorian desperation to cling to old-time religion found its ultimate expression in the defense mounted by English naturalist Philip Gosse; he met the new geological findings head-on, arguing that God had strewn fossils far and wide precisely as a test of faith. All those bones and impressions in stone made the Earth look far older than the Biblical 6,000 years, Gosse said, but in fact it was not.

Less ingenious thinkers sought refuge in the occult, a booming realm patrolled by mesmerists, spiritualist mediums, mind-readers, clairvoyants, and the like. But when skeptical critics, Penn faculty members among them, began exposing occult practitioners as charlatans (“Feet and Faith,” Mar|Apr 2006), the public wondered if there was any way to distinguish between the genuine and the fake. Along came a group of British scholars, who in 1882 founded the Society for Psychical Research with a mission of subjecting paranormal claims to the same evidentiary rigor that governed chemistry, geology, and the other sciences. It was in the Society’s organ, The Proceedings of the Society for Psychical Research, that Newbold’s essay appeared.

There’s not much doubt as to where the Society’s sympathies lay. In 1896, the illustrious American psychologist William James pointed the way in an article published just ahead of Newbold’s in the Proceedings. James’s piece, in fact, was his farewell address as president of the Society, which by then had become Anglo-American. In his talk, he applauded the group not just for adhering to the scientific method but also for bridging the gulf between science and folk wisdom:

It is the intolerance of Science for such phenomena as we are studying, her peremptory denial either of their existence, or of their significance except as proofs of man’s absolute innate folly, that has set Science so apart from the common sympathies of the race. I confess that it is on this, its humanizing mission, that our Society’s best claim to the gratitude of our generation seems to me to depend. We have restored continuity to history. We have shown some reasonable basis for the most superstitious aberrations of the foretime.

James, however, was perhaps being disingenuous. Although he might pretend that the Society was in business largely to validate concerns dear to the mass heart, elsewhere in the same address he showed his true colors. Although the Society has generated some promising results, he noted, “we must all share in a regret that the evidence ... should not grow
more voluminous still. For whilst it cannot be ignored by the
candid mind, it yet, as it now stands, may fail to convince
coercively the sceptic." The idea, then, was to keep up one’s
hopes for a breakthrough into the other side while continu-
ing to insist that paranormal claims pass the kinds of tests
applied to hypotheses in the other sciences.

On the heels of James’s pep talk, Newbold’s 10-page essay, “Sub-
Conscious Reasoning,” must have come as a downer. In the first
paragraph, the writer announced that the three cases of preg-
nant dreaming about to be narrated were—paranormally speak-
ing—duds: “The results were … of such a character that they could
have been attained by processes of associative reasoning analo-
gous to those of the upper consciousness, and we are therefore
not required to ascribe to the suppositional ‘subconscious’ states
any supernormal powers.” At this point, supernaturally inclined
readers might have frowned and skipped ahead to the next arti-
cle, but today sleep scientists prize “Sub-Conscious Reasoning”
for its insights into the nature of non-occult dreaming.

Newbold led off with a case featuring his colleague William A.
Lamberton, a Penn professor of Greek whose first-person account
described a dream—or, rather, the aftermath of a dream—from a
few years earlier, when he was teaching classics at Lehigh
University. In his spare time, Lamberton had dabbled in math,
zeroing in on a knotty geometry problem: “Given an ellipse, to
find the locus of the foot of the perpendicular let fall from either
distance from me on the opposite wall.” Lamberton
took it as a challenge, which he tried to overcome by
playing around with various equations. No go.

Then one morning he awoke “in possession of the desired
solution under circumstances to me strange and interesting …
First— the solution was entirely geometrical, whereas I
had been labouring for it analytically without ever drawing
or attempting to draw a single figure. Second— it presented
itself by means of a figure objectively pictured at a consid-
erable distance from me on the opposite wall.” Lamberton
jumped out of bed and jotted down on paper the writing he’d
just seen on the wall. “Needless to say, perhaps,” he added,
“that the geometrical solution being thus given, only a few
minutes were needed to get the analytical one.”

Newbold’s other two cases both originated in the sleeping mind
of Hermann V. Hilprecht, a German-born professor of Assyrian at
Penn whom the Gazette has recently presented in an unfavorable
light (see “The Rise and Fall of Hermann Hilprecht,” Jan/Feb 2003, which discusses accusations that the professor took credit
for archaeological work he hadn’t done, and appropriated arti-
facts rightfully belonging to the University). In Newbold’s article,
however, Hilprecht is simply “another friend and colleague” who
happens to be a creative dreamer.

Compared to Lamberton’s elliptical locus-focus, the first prob-
lem to which Hilprecht dreamt a solution was simplicity itself:
What’s the meaning of Nebuchadnezzar, the name of the leg-
dendary Babylonian king? Hilprecht had sided with a colleague
who construed the name as a prayer to the god Nebo, asking
him protect the beaker’s “mason’s pad, or mortar board”—in
other words, his “work as a builder.” But one night Hilprecht
awoke from a restless sleep with “a dim consciousness of hav-
ing been working at his table in a dream,” along with a convic-
tion that Nebuchadnezzar should be translated as “Nebo pro-
tect my boundary.” After assuring himself that this answer was
etymologically sound, Hilprecht went public with it, and accord-
ing to Newbold “it has since been universally accepted.”

Material worthy of The Thousand and One Nights gave rise to
Hilprecht’s second problem-solving dream, which occurred in
March of 1893. A Penn expedition to the temple of Bel at Nippur
(in present-day Iraq) had brought back a sketch of two agate
fragments with inscriptions in cuneiform. Hilprecht had made
a stab at translating these, but the results, he confessed, left
him “far from satisfied.” One night a “tall, thin priest of the old
pre-Christian Nippur” came to Hilprecht in a dream, informing
him in either English or German (Hilprecht couldn’t say which)
that the fragments were portions of earrings, and that they had
a complex provenance. A Babylonian king, Kurigalzu, had sent
an inscribed votive cylinder of agate” to the temple of Bel,
along with a command for its artisans to make him a pair of
agate earrings. Having no other agate to use, the workmen cut
the cylinder itself into three parts, “thus making three rings,
each of which contained a portion of the original inscription.”
(Why the third earring, the priest did not explain. Maybe it was
a spare.) Each of the two fragments depicted on the sketch in
Hilprecht’s possession belonged to a different earring. The
third earring, the priest finished up, would never be found.

In the morning Hilprecht consulted the sketch and decided
that his dream-visitor was right. Put together correctly, the
fragments indicated that the votive cylinder from which they’d
come had borne this inscription: “To the god Ninib, son of Bel,
his lord, has Kurigalzu, pontifex of Bel, presented this.”

But not so fast, Hilprecht cautioned himself. The sketch depict-
ed one fragment as white and the other grey, so how could they be
chips off the same cylinder? The artifacts themselves were in the
custody of the Imperial Museum in Constantinople, and there
Hilprecht betook himself in August of 1893. After locating the
fragments in two widely separated cases, he arranged them side-
by-side and finally savored his Eureka moment: “they had, in
fact, once belonged to one and the same votive cylinder. As it had
originally been of finely veined agate, the stone-cutter’s saw had
accidentally divided the object in such a way that the whitish vein
of the stone appeared only upon the one fragment and the larger
grey surface upon the other.”

As scholarly insights go, Hilprecht’s wasn’t a pip, but Newbold
wasn’t content with simply reporting it. In keeping with the
Society’s agenda, he sniffed around for supernatural influ-
ences. But after unpacking the dream into an orderly series of
propositions, he decided that “not one of these items was
beyond the reach of the processes of associative reasoning,
which Professor Hilprecht daily employs.”

Newbold’s handling of the three “Penn dreams” is
admirably clear-headed. It would be a long time, in
fact, before dreams were analyzed with such dispassion-
ate precision again.

A decade or so after the publication of “Sub-Conscious
Reasoning,” Sigmund Freud and his followers began incor-
porating dreams into psychoanalysis. For the Freudians,
dreams were akin to plays staged in a country ruled by an
uptight dictator. Just as an ingenious playwright tries to slip
of his famous work, the novelist recalled: "I had long been try-
ing to pin down the structure of benzene for some time. It's also
true of Kekule, who had been trying one particular step of a multiple phase process and the dream
awoke to see the solution to his ellipse-puzzle projected on that
wall? Why, the wish to solve the problem, of course—nothing clos-
eted or shocking in that. The same question can be asked about
Hilprecht’s dream of the Babylonian priest, who doesn’t appear to
have dropped in to indulge some shameful urge but rather to
satisfy the dreamer’s straightforward, unrepressed desire to
make sense of two tantalizing artifacts.

It took a long time and a lot of toiling in sleep labs, but eventu-
ally the psychoanalytical theories of dreaming gave way to less convoluted ones. As psychiatrist Peter D. Kramer notes in
his recent book *Freud: Inventor of the Modern Mind*, today it
would be hard to find “defenders of the view that dreams are
minutely and complexly constructed to hide and yet retain
evidence of unacceptable beliefs and feelings.” Using such
tactics as interrupting and quizzing sleeping subjects and
drawing upon many multiples of the number of dreams Freud
had to work with, researchers now tend to view dreams as
manifestations, however scrambled, of their owner’s everyday
history and experiences. Dreams no longer play a leading role
in therapy, and many therapists don’t address them at all
unless the patient brings them up herself.

All of which has given Newbold’s article renewed currency.
With its broad learning and attentiveness to detail, the piece
foreshadows a conclusion stated by the contemporary psychol-
ologist Dierdre Barrett: “Creative problem-solving dreams virtu-
ally always occur only after the dreamer has done extensive
work on the issue awake. Most typically, the dreamer is stuck at
one particular step of a multiple phase process and the dream
involves that step.” This is true of Kekule, who had been trying
to pin down the structure of benzene for some time. It’s also
ture of the imaginative Stevenson. In an account of the genesis
of his famous work, the novelist recalled: “I had long been try-

**Newbold’s handling of the three “Penn dreams” is admirably clear-headed. It would be a long time, in fact, before dreams were analyzed with such dispassionate precision again.**

Several years later, however, other archeologists began to
look at Newbold’s method with a critical eye. They correctly
noted that Newbold’s system was faulty, unreliable, and
based on a number of unproved assumptions. Newbold’s
interpretation of the Voynich Manuscript was eventually
completely disregarded by archeologists and now many
archeologists do not even believe that Roger Bacon was the
author of the manuscript in question.

The Voynich Manuscript remains undeciphered.

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