

Modern Correlates of Freudian Psychology

Infant Sexuality and the Unconscious

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Freud's ideas permeate our society today. They form the basis for psychoanalysis and have been used to analyze art, history, myths, literature, and many forms of human behavior. Yet at the time Freud formulated his theories, there was little or no physiologic basis for them. However, in the past few years, advances in neurophysiology suggest that at least the following two elements of Freudian doctrine may have physiologic underpinnings: (1) infant sexuality and the latent period and (2) the unconscious. In this article, a brief description of Freud's ideas will be given, followed by the modern evidence that may support them.

INFANT SEXUALITY AND THE LATENT PERIOD

Freud came to recognize infant sexuality and the latent period after he abandoned his seduction theory in 1897. According to the seduction theory, hysteria is caused by a sexual assault during early childhood [1]. Freud appears to have formulated the basis for this theory during his years in Paris [2].

In 1885, when he was 29 years old and just finishing his medical studies, Freud made a study trip to Paris to work under Jean Martin Charcot, a famous French neurologist and expert on hysteria, at the Salpêtrière Hospital. During this time, Freud was exposed to a body of literature attesting to the reality and commonplace nature of sexual abuse in early childhood, often occurring within the family. The most important part of this literature was a book, *Etude médico-légale sur les attentats aux mœurs* (A Medico-Legal Study of Assaults on Decency), written by Ambroise Auguste Tardieu,

professor of legal medicine at the University of Paris, dean of the faculty of medicine, and president of the Academy of Medicine in Paris. In his book, first published in 1857, Tardieu drew attention to the frequent, brutal character of sexual assaults on children, especially young girls.

At the Paris morgue, Freud witnessed autopsies performed by Tardieu's successor to the chair of legal medicine, Paul Brouardel. Freud was deeply impressed by Brouardel's forensic autopsies and lectures, which he rarely missed. The postmortem material was often gruesome, but there was much, wrote Freud, "which deserved to be known by doctors but of which science preferred to take no notice." Apparently Freud was here referring to the young victims of sexual abuse, about whom Brouardel wrote a book, *Les Attentats aux mœurs*.

Freud held to his seduction theory until the spring of 1897. At this time, he began to believe that the childhood seductions, which his analytic patients had revealed, and about which he had built his whole theory of hysteria, had never occurred; the memories of these seductions were, by and large, fantasies "intended to hide the autoerotic activities of the early years of childhood" [3]. Therefore, the adults had not lusted after their children; instead, the children had lusted after the adults, and "from behind the fantasies, the whole range of a child's sexual life came to light."

From his adult patients, Freud deduced the fact that "the newborn child brings with it the seeds of sexual impulses which continue to develop for some time and then succumb to a progressive suppression" [4], in

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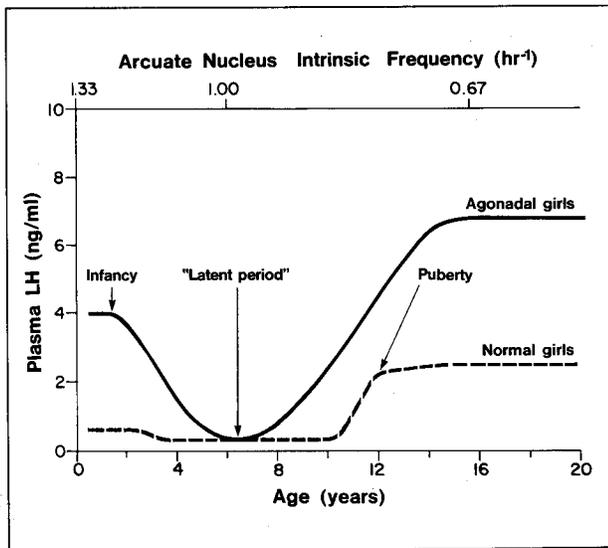


Figure 1. Plasma luteinizing hormone (LH) levels in normal girls and girls with Turner's syndrome (agonadal girls). The elevation of luteinizing hormone at birth, and the fall of luteinizing hormone levels after about two years of age may be responsible for the infant sexuality and latent period recognized by Freud. The pituitary produces luteinizing hormone and follicle-stimulating hormone in response to regular pulses of gonadotropin-releasing hormone [19]; these pulses are generated about once every hour and a half (0.67 hour^{-1}) in an adult. A newly proposed mechanism for puberty suggests that the arcuate nucleus of the hypothalamus, an independently functioning physiologic oscillator that generates the gonadotropin-releasing hormone pulses, must resonate with a second oscillator, a high-frequency circadian pacemaker that generates many normal body rhythms, for hormone pulses to be produced. The arcuate nucleus intrinsic frequency appears to diminish throughout life, with resonance occurring at 1.33 hour^{-1} at birth and 0.67 hour^{-1} at puberty; there is loss of resonance at the latent period in between. Menopause finally takes place when the gonadotropin-releasing hormone pulse frequency drops below that needed to sustain normal ovarian function (the ovaries are frequency-sensitive [20]) and the ovaries fail [9] (figure modified from Grumbach [21]).

other words, a period of infant sexuality followed by a latent period. "It seems," Freud wrote, "that the sexual life of the child mostly manifests itself in the third or fourth year in some form accessible to observation," after which it disappears until the onset of puberty. The sexual impulses of infancy are usually not recalled because of an "amnesia which hides from most people (not all) the first years of their childhood . . ." [4]. Indeed, much subsequent research has substantiated the period of infantile amnesia [5].

Freud made his first direct observation of infantile sexuality in a famous case of 1909 [6]. The boy, little Hans, had a phobia for horses, as well as very strong

sexual impulses. For example, at age four, after being bathed, "as his mother was powdering around his penis and taking care not to touch it, Hans said, "Why don't you put your finger there?" When his mother insisted that such an action would be disgusting (*eine Schweinerei*), Hans laughingly replied, "but great fun."

Hans quickly developed a strong attraction to many other females, including Mariedl, the 14-year-old daughter of the landlord, who played with him. One evening as he was being put to bed, he said, "I want Mariedl to sleep with me." When told this was not possible, he replied, "Oh, then I'll just go downstairs and sleep with Mariedl." Hans, in fact, did take his clothes and go towards the staircase to go and sleep with Mariedl, "but naturally he was brought back."

Freud's observation of infant sexuality formed the basis for many of his later theories, including the Oedipus complex. In addition, it led him to accept the belief that an imagined seduction or sexual abuse in childhood was as psychologically important as a real one, a belief now being questioned by a small, vocal group of dissident psychoanalysts [2].

Yet despite its pivotal role, Freud was able to adduce little physiologic evidence for the existence of infant sexuality and a latent period. In a footnote, he writes that "a possible anatomic analogy to the infantile sexual function which I describe would be given by the finding of Bayer (*Deutsches Archiv für klinische Medizin*, vol 73), who states that the internal sex organs (uterus) are, as a rule, larger in newborns than in older children. However, there is no verification of Halban's concept that there is also an involution of other parts of the genitalia after birth. According to Halban (*Zeitschrift für Geburtshilfe und Gynäkologie*, LIII, 1904), this process of involution ends after a few weeks of extra-uterine life [4].

Recent physiologic studies provide a somewhat stronger objective basis for infant sexuality and the latent period. For example, the human fetal pituitary gland can synthesize and store follicle-stimulating hormone and luteinizing hormone by 10 weeks of gestation and can secrete these hormones by 11 and 12 weeks. During the first days after birth, follicle-stimulating and luteinizing hormones increase. These high gonadotropin levels are associated with increased testosterone levels in male infants and increased estradiol levels in females. After about the age of two years in girls and a slightly lower age in boys, the gonadotropins fall to the low childhood levels present until the onset of puberty [7].

However, age two years is only an average figure, and the elevation of gonadotropins and sex hormones persists until later in childhood in some children. The

fluctuation just described is especially marked in girls with Turner's syndrome and may be explained by a newly proposed mechanism of puberty and menopause [8,9] (Figure 1).

THE UNCONSCIOUS

The unconscious has a central role in Freudian psychology. It was, wrote Freud, a place into which man tried to banish those memories he wished to ignore. However, in many cases, the banished memories came to the surface, transformed into the stigmata of hysteria, into dreams, or even into what came to be known as Freudian slips—mistakes in speech, chance actions, forgetting of names and order of words, erroneously carried out actions. Most important of all, Freud believed that the pulling back of unconscious memories into the conscious could have a vital therapeutic effect [10].

Much recent interest in the experimental study of the unconscious has been stimulated by Dr. Anthony Marcel, a psychologist at Cambridge University [11]. Two phenomena described by Dr. Marcel [12,13], the masked-word effect and blindsight are worthy of note. A word is masked by flashing it in a nonsense context so confusing that an experimental subject will not even know he or she has seen it. Then the subject is asked which of two words looked or meant the same as the one masked. If, for example, the unseen word was "blood," the look-alike might be "flood," whereas the related meaning might be "flesh." Although they did not know what word they had seen before, subjects were right in their guesses 90 percent of the time. Blindsight occurs in some people with cortical blindness. If an object is placed in front of such a person and he is asked to reach for it, he does not grope. Instead he reaches directly for the object, with preparatory motions fine-tuned to its specific location, shape, and size. According to Dr. Marcel, blindsight and the masked-word effect show that there can be understanding without conscious awareness.

Further evidence of unconsciously motivated behavior has been evoked experimentally by Dr. Benjamin Libet, professor of physiology at the University of California at San Francisco. While making an electroencephalographic recording, Dr. Libet instructs his subject to flex a hand spontaneously and at the same time to signal with an electronic device when he or she (the subject) becomes aware of the intent to move. That awareness generally occurs 0.2 second before the movement actually occurs. However, analysis of the electroencephalographic pattern shows that the brain starts to initiate the act about 0.4 second before the subject is aware of wanting to. According to Libet et al [14], this means that voluntary actions are not initiated consciously; instead, they are initiated somewhere in

the brain outside of awareness. Other studies also suggest that many other stimuli initially take place outside of consciousness [15,16].

APPRAISAL AND CONCLUSIONS

Even today, Freud continues to generate controversy. To some extent, his presentation of his ideas may be responsible. Although he ranks among the greatest German writers, his works do not always appear scientific since he did not employ controls, statistics, or other devices now considered essential by scientists. In addition, he can occasionally be annoying to read because of statements that sound pompous today. In the case of little Hans he unabashedly quotes references to himself as "the Professor." For example, Hans's father says to his son, "Will you come with me on Monday to see the Professor, who can take away your nonsense for you?" Of course, such references may merely reflect the Germanic reverence for academic titles so prevalent in turn-of-the-century Vienna.

Another problem with Freud's writings, at least in English, is the occasionally poor quality of the translations. The translators were, for the most part, physicians, who tended to replace Freud's simple, forceful German with strange-sounding Greek or Latin terms. For example, the ego and the id are *das Ich* and *das Es* in German, the "I" and the "it" [17].

Yet Freud himself had a fondness for erudition despite an occasionally shaky sense of the meaning of foreign words he used. In *Das Unbewusste* (1915) (*The Unconscious*) [18] he writes, "Die bekannten Fälle von 'double conscience' (Bewusstseinspaltung) beweisen nichts gegen unsere Auffassung." [The known cases of *double conscience* (split consciousness) do not disprove our conception.] Note that Freud has confused the English word *conscience* (*das Gewissen* in German) with the English word *consciousness* (*Bewusstsein* in German).

Despite these minor failings, Freud has proved to be a remarkably prescient, astute observer of mental function. In his 1905 book, *The Interpretation of Dreams*, Freud proposed a model of the mind quite similar to modern ones, with information first registering in a nonconscious realm before becoming conscious. Moreover, his recognition of infant sexuality and a latent period is given credence by recent endocrinologic studies. Perhaps future neuroscientists will find that even more of his ideas have a real basis in physiology.

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