

## ON HUMAN NATURE

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### Is Orgasm Essential?

The French call it *le petit mort* (the little death), a convention shared by Shakespeare and other Elizabethans. Its etymological ancestors include the Greek words *orgasmos* (to grow ripe, swell, be lustful) and *orge* (impulse, anger) and the Sanskrit *urj* (nourishment, power, strength). It is surely one of the most fundamental of human satisfactions—a pleasure for which we are at times willing to pay, to take risks, to commit ourselves to lifetimes of unwanted responsibility, even to kill.

Different cultures have taken different views of orgasm and have come up with countless strategies for achieving, avoiding, enhancing, or delaying it. Among the Mundugumor, of New Guinea, Margaret Mead found that lovemaking is conducted “like the first round of a prizefight,” with biting and scratching being important parts of foreplay. In Samoa, by contrast, couples work up to the big event slowly and gently: the man is expected to prepare the woman’s mind with songs and poetry and her body with playful, skillful hands. Within the tradition of Tantric Buddhism, men have typically been contemptuous of orgasm and have used various stratagems to maintain,

for hours on end, the blissful vertiginous state that immediately precedes it. In modern Western societies, some psychoanalysts have decreed that only a disturbed woman would pursue multiple orgasms, whereas others have defined sexual satisfaction as a vital aspect of physical and psychic health.

Indeed, orgasm may be a universal experience, or at least capacity, not only of humans but of primates generally. Male monkeys often let out a whoop at the moment of ejaculation, as if in honor of some explosion of good feeling. For the females, with no event that compares with ejaculation, the inferences have always been more conjectural, but numerous studies have suggested that they too experience a climax. Doris Zump and Richard P. Michael, both of Emory University, have found that the female rhesus monkey typically reaches back toward her partner, arms flailing spasmodically, at the moment he ejaculates. Given the unlikelihood that these animals share a stylized expression of concern for their erupting companions, the inference of a whole-body reflex seems reasonable.

For all the attention it has received, though, orgasm has remained something of a mystery. The riddles of how it works and why it exists have never been fully resolved, despite the best efforts of physicians, psychologists, and evolutionists. The renowned sex researchers William H. Masters and Virginia E. Johnson shattered a number of myths about the phenomenon with their massive 1966 study, *Human Sexual Response*. Yet their work left crucial questions unanswered—questions that continue to spawn confusion and controversy. Is orgasm primarily a physical phenomenon, or is it psychological at root? Where within the female sexual organs is it centered: in the clitoris, or in the walls of the vagina? Are the apparent differences between male and female orgasm basic to our biology, or are they mere epiphenomena of culture? And, most interesting: Why did such a sensation evolve in the first place?

One of the first modern, clinical descriptions of orgasm was ventured in 1855, by the French physician Felix Riboud, who, in one dramatic paragraph, identified most of the main elements of

the phenomenon as it is now recognized: The pulse quickens, the eyes become dilated and unfocused. . . . With some the breath comes in gasps, others become breathless. . . . The nervous system, congested, is unable to provide the limbs with coherent messages: the powers of movement and feeling are thrown into disorder: the limbs, in the throes of convulsions and sometimes cramps, are either out of control or stretched and stiffened like bars of iron: with jaws clenched and teeth grinding together, some are so carried away by erotic frenzy that they forget the partner of their sexual ecstasy and bite the shoulder that is rashly exposed to them till they draw blood. This epileptic frenzy and delirium are usually rather brief, but they suffice to drain the body's strength, particularly when the man's over-excited state culminates in a more or less abundant emission of sperm.

That orgasm might also have a psychological dimension was first formally recognized by Sigmund Freud, whose psychoanalytic theory—in a radical departure from the conventional wisdom of the late nineteenth century—initially located the problems of neurotics in the blockage of sexual fulfillment. Through analysis of his patients' jokes, dreams, and psychological symptoms, he attempted to show that the fear of normal sexual feeling caused neurosis, and that only recognizing such fear could bring psychic health. In his case study of Frau Emmy von N., a forty-year-old woman he treated in 1889, Freud attributed severe phobias in part to "the fact that the patient had been living for years in a state of sexual abstinence," adding that "such circumstances are among the most frequent causes of a tendency to anxiety."

Yet, because he misunderstood a crucial aspect of female physiology, Freud ended up describing orgasm in a way that ultimately would prove harmful both to women and to the study of sex. Being something of an evolutionist, he suspected that so impressive an event must exist to assist in reproduction—and must therefore be tied to intercourse. The male peak of pleasure, coinciding almost exactly with ejaculation, seemed nicely attuned to the demands of insemination. Freud reasoned, by analogy, that the vagina should produce a corresponding feminine ecstasy when closed around the organ that so relentlessly seeks a berth in it. To account for the sexual sensitivity of the clitoris (which is entirely external to the vagina), Freud theorized that female orgasm comes in two varieties—one a mere adolescent thrill, the other a product of maturity. He explained the difference in 1920, in *A General Introduction to Psychoanalysis*:

Of little girls we know that they feel themselves heavily handicapped by the absence of a large visible penis and envy the boy's possession of it; from this source primarily springs the wish to be a man which is resumed again later in the neurosis, owing to some mal-adjustment

to a female development. The clitoris in the girl, moreover, is in every way equivalent during childhood to the penis; it is a region of especial excitability in which auto-erotic satisfaction is achieved. The transition to womanhood very much depends upon the early and complete relegation of this sensitivity from the clitoris over to the vaginal orifice. In those women who are sexually anesthetic, as it is called, the clitoris has stubbornly retained this sensitivity.

It was not until 1953, when the American sex researcher Alfred C. Kinsey published his ground-breaking *Sexual Behavior in the Human Female*, that scientists began to see just how wrong Freud had been about this. In Kinsey's study, more than twenty-seven hundred women, interviewed throughout the United States, said they did not typically attain orgasm through vaginal stimulation alone. When questioned about techniques of masturbation, eighty-four percent reported that they achieved "the little death" through massage of the clitoris and the labia. And when, in another part of the Kinsey study, gynecologists examined the genitals of more than five hundred women, ninety-eight percent were found to be sensitive to light touch on the clitoris but only fourteen percent to equivalent touch on the vaginal walls. In the light of these findings, Kinsey declared the supposed transfer of sensitivity from clitoris to vagina a "biologic impossibility." He expressed sympathy for the countless normal women who had been led to expect such a transfer and had imagined themselves dysfunctional when they failed to achieve it. "There is," he wrote, "no evidence that the vagina is ever the sole source of arousal or even the primary source of erotic arousal in any female."

But it was Masters and Johnson who—after studying how hundreds of people actually had sex—really pulled the rug out from under Freud's armchair. In a series of studies conducted between 1954 and 1965 at the Reproductive Biology Research Foundation, in Saint Louis, they went beyond the interview to make the study of sex an empirical science. Equipped with electrodes to measure heart rate and breathing, sensors to gauge the strength of muscle contractions, even cameras to film the inside of the vagina, they set about to observe the act itself. The nearly seven hundred participants were observed not only in intercourse but also in masturbation, including, for women, directed vaginal masturbation with a plastic penis that doubled as a camera. Some of the subjects were old, some were pregnant, some homosexual. But most were just conventional folks in the prime of their lives, doing what came naturally.

Like Kinsey before them, Masters and Johnson did a lot of debunking—and

Freud was not their only target. Physicians who thought sex during pregnancy would harm the developing fetus were proved wrong, as were psychologists who thought pregnant women did not desire it. Pundits who believed that aging takes away both impulse and ability were hard-pressed to explain reports of eager septuagenarians with lubricating jelly. And there were startling findings about the routine details of sexual physiology, many of which had never been properly studied. In what would come to be known as the EPOR model, Masters and Johnson defined four stages of normal sexual response—excitement, plateau, orgasm, and resolution—which involved almost every part of the body.

The excitement phase was described as one of gradual buildup—of increasing muscle tension, vaginal lubrication, and engorgement of blood vessels in the penis, the clitoris, and the nipples. Plateau was a sustained period of excitement, during which heart rate and respiration increase and the skin flushes. Orgasm, the discharge of the built-up tension, was marked by muscle contractions throughout the body (particularly in the genital area), disgorgement of the collected blood, ejaculation in the male, and intense pleasure in both sexes. Resolution was a period of diminishing tension, in which the body returns rapidly through the plateau and excitement levels to an unstimulated state.

Masters and Johnson reported a number of striking similarities in the sexual functioning of men and women, including parallel sensitivities in the penis and the clitoris, flushing of the chest during the plateau phase, and identical rhythmic contractions of the anal sphincter during orgasm. But they uncovered at least one critical difference: in men the resolution phase was accompanied by a complete loss of sexual responsiveness, lasting anywhere from a few minutes (in teenagers) to a day or more (in older fellows), whereas women appeared capable of "returning to another orgasmic experience from any point in the resolution phase." Indeed, women seemed at times to experience one orgasm after another, in uninterrupted succession. This finding, anticipated in Kinsey's interviews, made women seem veritable sexual athletes compared with men. It overturned the Victorian notion of poorer female responsiveness and helped pave the way for a new sort of sexual liberation.

Like Kinsey, Masters and Johnson found no evidence that sexual sensitivity is transferred from the clitoris to the vagina as a woman matures. In fact, they challenged the very existence of vaginal orgasm, suggesting that any female climax achieved through intercourse alone

must result from indirect stimulation of the clitoris by the moving labia. (This possibility led the polemicist Shere Hite, in her 1976 book, *The Hite Report*, to characterize vaginal penetration as the "Rube Goldberg" route to sexual satisfaction.)

Most of Masters and Johnson's findings have held up remarkably well, and the clitoris is now recognized as the primary center of female sexual pleasure. Yet some sexologists remain firmly convinced that there *is* such a thing as vaginal orgasm. In fact, one research team, that of Alice K. Ladas, Beverly Whipple, and John D. Perry, reported in 1982 that they had traced the vaginal orgasm to a particular location—a spot on the innermost third of the front vaginal wall. In a popular book, they dubbed this region the G spot, in honor of Ernest Grafenberg, a physician who had described it in 1950. Other studies have since suggested that some women do experience purely vaginal orgasms, distinct from the clitoral type. And surveys have found that, although women prefer clitoral to vaginal stimulation if asked to choose, most prefer a climax that blends the two. None of this suggests that a woman's capacity for vaginal orgasm has anything to do with maturity or psychological health—or that vaginal orgasm is anywhere near as common as clitoral orgasm. But Freud may have been right in the belief that it exists.

Freud may also have been right to think of orgasm as a partly psychological phenomenon. One curious aspect of the Masters and Johnson outlook was the notion that sexual pleasure—whether male or female—is merely muscular and cutaneous. They didn't come right out and say that, yet they managed to write hundreds of pages on the subject with nary a mention of its mental or emotional aspects. The racing heart, the flushed skin, and the gasps were real, they seemed to suggest, yet the profound emotion that sometimes accompanies those physiological events was as insubstantial as a shadow.

This aspect of Masters and Johnson's work seemed a throwback to the model of emotion advanced by the psychologists William James and Carl Lange around the turn of the century, a model that defined such experiences as joy and sorrow, affection and anger not as primary sensations but as secondary mental reactions to physiological events. Even as Masters and Johnson's work was in progress, however, their physiological bias was being undermined.

One of the first researchers to show definitively that sexual feeling originates above as well as below the chin was the neurologist Robert G. Heath, of Tulane University, who found that certain areas of the brain, when directly stimulated,

produce the sensation of sexual pleasure. Heath's study, published in 1972 in *The Journal of Nervous and Mental Disease*, centered on two subjects (a mentally disturbed man of twenty-four and an epileptic woman of thirty-four) who, for therapeutic reasons, had already had electrodes implanted in their limbic systems, the part of the brain that mediates pleasurable emotion.

Not only did neural stimulation induce sexual pleasure, but sexual activity seemed to cause a great deal of neural activity. Heath found that when either patient was sexually stimulated, electrical waves generated within the septal region, which links the limbic system to the hypothalamus, resembled waves whose appearance in other parts of the brain suggests the onset of a seizure. But these subjects were not experiencing seizures—except to the extent that orgasm constitutes one. (Here, Felix Riboud's early characterization of orgasm as an "epileptic frenzy" seems prescient.) Moreover, the electrical changes in the septal area were discernible before the orgasm even began, suggesting that they are not just secondary responses to orgasmic muscle contractions but may play a part in inducing them.

Inspired by such findings, the physiologist Julian Davidson, of Stanford, proposed in 1980 a "bipolar hypothesis" of orgasm, intended to integrate all the known physiological and psychological data. Davidson first undertook to demonstrate that orgasm has many of the features of an altered state of consciousness—that it requires an ability to let go of inhibitions and involves changed perceptions of time, space, and motion. He cited studies showing that both men and women, when asked to write subjective descriptions of orgasm, used such phrases as "loss of contact with reality. All senses acute. Sight becomes patterns of color, but often very difficult to explain because words were made to fit in the real world."

Having established that orgasm occurs in the mind as well as the loins, Davidson posited a hypothetical "organ of orgasm" to mediate between the two. He speculated that this organ—presumably a portion of the nervous system that includes the limbic system and the septal area studied by Heath—interacts with the cerebral cortex to create an altered state of consciousness during sex. Because the cortex processes sensory data, Davidson reasoned that it must bombard the organ of orgasm with "cognitive input," in the form of sight, sound, and fantasy. Meanwhile, according to his model, the organ would continue to generate—and respond to—pelvic muscle contractions, in a dynamic, two-way interchange.

Davidson's model remains largely untested, but it has much to recommend

it as a heuristic device. For one thing, it rescues sexual feeling from muscular marginality and puts it back in the center of our experience (and our nervous systems), where most of us sense it belongs. For another, it enables us to talk about the psychological and physical mechanics of orgasm without giving either precedence over the other. For all its virtues as a description of the phenomenon, however, Davidson's model leaves untouched the central question of why we are subject to orgasm in the first place. Is orgasm an adaptation—a tendency that took hold by bestowing reproductive advantages on creatures who exhibited it, and that has been tailored by natural selection to the contingencies of survival—or does it exist by sheer happenstance?

It seems clear that, in males, orgasm directly rewards behavior associated with ejaculation, with insemination, and thus with reproduction. Various hypotheses have been proposed to account for female orgasm: theorists have speculated that uterine contractions may promote the motility of sperm and thus assist in fertilization (weakly supported); that recovery from orgasm may serve to keep women at rest in a horizontal position while the sperm find their way (a reasonable inference); and that the sensation itself rewards sexual activity (which is undeniable). What makes the largely non-vaginal female orgasm problematic is that, as Alfred Kinsey noted in 1953, "the techniques of masturbation and of petting" induce it more readily than "the techniques of coitus itself." This fact has led some evolutionists, such as Stephen Jay Gould, of Harvard, to argue that female orgasm is not an adaptation at all but a by-product of human development.

Males and females are, of course, variations on a single form; we are indistinguishable at conception but acquire separate characteristics during later stages of development, as hormones act to suppress or exaggerate particular anatomical features. The result is that each sex ends up sporting homologues of the other's distinctive organs. That being the case, it makes no sense, in Gould's estimation, to puzzle over the presence of, say, male nipples; they exist not because they enhance fitness but because they are part of the anatomical tool kit that enables females to develop breasts. Gould applies the same reasoning to female orgasm: it exists not because it fosters reproduction but because the clitoris is the homologue of the penis—"the same organ, endowed with the same anatomical organization and capacity of response."

Gould may be right about male nipples, but the idea that clitoral orgasm is an adaptation, and not just the by-product of one, doesn't seem all that farfetched. For

one thing, as Masters and Johnson demonstrated, male and female orgasms are *not* identical phenomena. If, as Gould contends, the clitoris has exactly the same "capacity of response" as the penis, why is female orgasm more gradual, more sustained, and more repeatable than male orgasm? One plausible answer is that male and female sensitivities have been shaped by different selective pressures. For the males in many species, reproduction can be as simple as inseminating a female. For females, on the other hand, reproduction inevitably entails gestation, labor, and nursing. So it stands to reason that males would be rewarded, in an evolutionary sense, for rough-and-ready copulation—the sort encouraged by prompt, final orgasms—whereas females would do best by choosing carefully among suitors and trying to sustain a bond with one. Female orgasm, with its slower onset and its greater capacity for repetition, would seem far more likely to result from such sustained encounters than from quick, perfunctory ones.

But why, if female orgasm evolved as an aid to reproduction, is it centered largely *outside* the vagina? This is indeed a puzzling fact, but it doesn't automatically negate the adaptationist view. Certainly, a sensation can encourage an activity without being a direct product of it. Our sense of taste, so basic to nutrition, is not confined to the orifice that receives food; gustatory pleasure originates to a significant degree in the nose. No one would argue, on that basis, that taste does not serve to encourage and regulate eating. By the same token, female orgasm may originate outside the vagina and still serve as an inducement to copulation.

Moreover, as we have seen, the vagina has never been definitively desexed. Whether the G spot really exists I'm not qualified to say, but suppose that there *is* a sensitive region located on the innermost third of the front vaginal wall. What sort of behavior would this encourage? As devotees of the G spot have long been aware, sexual intercourse in the en face, or "missionary," position affords only minimal stimulation to that area, whereas "bestial" intercourse—in the front-to-back position characteristic of nonhuman mammals—maximizes it. (That position, incidentally, also facilitates clitoral touching.) The argument seems to be ripening toward climax: if there is such a thing as vaginal orgasm, it is perfectly tailored to the activity by which our primate ancestors engendered us. ●

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