

# Reproduction as a Function of Sexuality, Part I<sup>1</sup>

Wilhelm Reich, M.D.

## *1. Dispute on the concept of sexuality:*

If we review the broad physiological, sexological, and also philosophical literature, we find several common themes regarding the subject of sexuality: the opinion that sexuality is said to be naturally separated from so-called mental eroticism. It is said that “sexual” and “genital” are identical. The assumption that sexuality is in the service of reproduction would mean that the function of sexuality (intended in the narrow sense of genital function) would be a function of a biological tendency to reproduce.

The first opinion pays homage to absolute psychological dualism: bodily and psychic eroticism at odds with one another. The second opinion has been proven totally wrong in a most careful way by Freud, because outside the genital sphere there are plenty of eroticisms that have nothing to do with reproduction, for instance, oral, urinary an anal eroticism, etc. Even in psychoanalysis, however, the assumption that the genital function is in the service of reproduction dominates. The third statement: “Sexuality is a function of reproduction,” has to be

reversed: “Reproduction is a function of sexuality.” The philosophical and moralistic scientific disciplines will necessarily have to deal with this, because their fundamental ideas stand or fall with the thesis that sexuality is a function of reproduction.

## *2. A theory of “relative sexuality” by Max Hartmann:*

If our thesis is valid, that sexuality is not a function of reproduction, but the reverse, then the fundamental functions of sexuality: electrical charge and discharge, as well as mechanical tension (increase of the surface tension) and mechanical relaxation by means of decreased surface tension, must be shown to be contained within the process of reproduction.

The biologist distinguishes several types of reproduction: first, reproduction by division, in which a cell grows, constricts in the middle, undergoes a division of the nucleus, and finally separates into two functionally and morphologically identical cells. Secondly, budding, in which, from the original stock, a completely new organism buds, which either remains attached to the parent or separates. Third, fertilization, i.e., the uniting of two sexually different cells, which is understood to be the actual sexual reproduction, as contrasted with other, asexual types of reproduction. With this

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<sup>1</sup> An English translation of Reich, W.: “Fortpflanzung eine Funktion der Sexualitat,” *Zeitschrift fur Politische Psychologie und Sexualokonomie*, 3: 24-31, 1936; translated from the German by James Strick and Manfred Fuckert.

distinction between sexual and asexual reproduction, the assumption is anticipated that sexuality involving the merger of two organisms resulting in the production of a third one, is said to be just a type of reproduction and nothing more than that.

First, let's deal with the third type of reproduction, the fertilization of two gametes, from which arises a "fruit." The biological process involved here, we will deal with later.

Until recently, biological theory was ruled by the opinion that the distinction between the sexes of the gametes was based on morphological differences. This assumption proves wrong because of numerous fertilization experiments. The Bütschli-Schaudinn hypothesis of sexuality claims that every protist and sexual cell is hermaphroditic or bisexual by nature, i.e., that it contains the complete biological equipment necessary for both male and female. By dominance of the development of one and suppression of the other potential, male or female sexual cells are formed ("gametes"). With the origin of sexually differentiated gametes, according to this assumption, simultaneously a tension is produced that causes the extremely differentiated sexual cells to merge: this union leads to a resolution of the tension. The production of the male sex can also take place due to external conditions, such as by certain genetic information. In the higher animals, the gametes are differentiated into male sperm cells and female egg cells. It can be demonstrated experimentally, however, that a sexual difference between the merging gametes even exists when no differences can be found between them, either externally or in the fine structure. Thus, physiological

differences, not morphological structural differences, cause the mutual tension, the union, and the resolving of the tension in the merger. One refers to "isogametes," i.e., those that are externally similar but "internally sexual opposites," not as male and female but as positive and negative, because one cannot usually identify the positive ones with either male or female; likewise not the negative ones. Fertilization only takes place between + and - types of gametes, but never between two of the same, positives or negatives. With protists, algae and fungi that have isogametic fertilization, there are consequently two strictly separate types of gametes, though they lack any external sign of being sexually different. If one brings together such outwardly completely identical, but functionally different-sexed types of gametes in one Petri dish, they group together in pairs: the gametes that previously swam evenly distributed gather themselves in smaller or larger groups; then the uniting of each pair of negative and positive gametes takes place.

Here we first come up against the question "what does the polarity between the two types of gametes consist of?" After we see the same polarity, the same attraction, merger, and relaxation even in morphologically identical gametes, it becomes self-evident that the structural and external difference in the gametes of higher animals cannot explain the polarity. The polarity is also not explained, however, by merely naming it positive or negative.

The Hartmann concept of "relative sexuality" can pave the way toward an understanding. Bütschli and Schaudinn already assumed in their hypothesis on

sexuality that every protist cell is bisexual, and that by the prevailing of the one or of the other could become male or female relative to another cell in which the opposite prevails. Hartmann found himself compelled by certain cases of autogametic fertilization, to assume that the hypothesis of fertilization and sexuality can only be correct if the sexual distinction of the gametes is not absolute but relative; if it could be proven that a usually female gamete, A, would behave as female with respect to a male gamete, B, but against a stronger female gamete A would behave as a male. The first thought of Hartmann of the possibility of a relative sexuality was proven correct in 1925.<sup>1</sup> Even earlier, biological experiments had shown that the general sexual differentiation (also in isogamy) and the general bisexual potential are also valid for the differentiated sexes and gametes in general.

The gametes of the brown alga *Ectocarpus siliculosus* (from Naples) are morphologically completely identical (isogametes), though this alga is strictly sexually differentiated. Here, gametes can only fertilize one another if they come from different plants. The observation of the fertilization (the forming of groups) results in different sexes; in this way one can distinguish between male and female, despite the isogamy. The female gametes settle down, each with a group of male gametes swarming around it. Depending on the speed and the intensity of group formation, one can distinguish strong, medium and weak male and female

gametes. In this organism, in addition to the usual fertilization, successful fertilizations between gametes of the same sex could be seen, revealing the difference between strong and weak male and female gametes. Hartmann concluded from this that the weaker gametes that are fertilized by the same-sexed stronger ones “change their sexual behavior” and thus in this case are “sexually relative.” Each cell has the ability to develop either in the female or the male sexual direction, and according to Hartmann it depends “solely on the environmental conditions in the broadest sense, whether the cell will have a female or male tendency.”

Hartmann considers the “double-sexed potential” of sexually differentiated but morphologically identical gametes to be proven, on account of his experiments and those of others. To summarize:

- Even morphologically (due to shape) and cytologically (due to fine structure) undifferentiated gamete show opposite sexual differentiation.
- These sexually differentiated gametes contain, however, the potential for both the positive and the negative sex.
- The gametes are sexually relative, the weaker taking on the opposite sexual function with respect to the stronger, same-sexed gamete.
- The positive or negative nature of the gametes cannot be called male or female. These terms only mean “sexual opposites.”

### 3. Is Fertilization of isogametes an electrical process?

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<sup>1</sup> Max Hartmann, *Die Naturwissenschaften* 13: 975-980.

We would not have brought up these findings of Hartmann in connection with our research on the orgasm function, except that they offer the key for the solution of what lies at the roots of sexuality. That the experiments of Hartmann unveil to us the dialectics of sexual differentiation is just one incidental benefit for the theory of dialectical materialism. "Relative sexuality" gains actual meaning only in connection of the nature of fertilization of gametes, whose powers seem not to be basically different from those powers that are seen in the sexual attraction of two opposite-sexed multicellular organisms. If we could discover a functional identity between the fertilization of gametes and the copulation of two animals (a question the uniform solution of which already hangs in the air of biological, physiological and psychological research), then a further part of the life process, and moreover an essential one, would be revealed.

If we intend to see [i.e., via Reich's orgasm formula], in the tension and relaxation and the related electrical charging, not only the essence of the orgasmic function but moreover the basic principle of living substance, then this function must also be confirmed at the roots of life, i.e., the fertilization of two single-celled individuals. If this proof is successful, then another must also be accomplished: that the so-called asexual reproduction, by division and budding, in principle underlies the same orgasmic function.

To begin from the experimentally established fact that a weaker gamete behaves as the opposite sex toward a stronger same-sexed one. That also, a

weak female behaves as male toward a stronger female, no matter what the nature of this "being stronger" is; and that a weak male behaves as female toward a stronger male. This relative sexual behavior only reveals potential bisexuality but says nothing about the nature of the "sexuality", .e., the urge or drive for merger by fertilization with other gametes; it is only by the nature of this urge, however, that the sexual behavior could be explained.

Let us first suppose that the two gametes, of no matter what sex, behave as two electrical systems; that they are self-evidently subject to the general laws of living substance. Let's further suppose that the differentiation of sexes would exist in the preparation of each + or - charge of the suspension of gametes. Let's compare furthermore, two organ systems with two electromagnets. If magnet A was charged strongly, and another one, B, was charged weakly, then magnet A would induce in magnet B, at the side facing A, a charge opposite to the charge of A.

Thus, A being +, magnet B must become - at the adjacent pole and "attract itself" to A. The same would be the case if A was strongly negative; then B would become +. This is only an analogy for the time being, which must first be confirmed in order for this hypothesis to be valid.

To clarify the problem, it would be best to quote from Hartmann's summary:

"Thus, all presuppositions and requirements of a sexual theory of fertilization are secured. Today this is the sole theory that not only deals with all

aspects and moreover deals with manifold aspects of fertilizations, but can pave the way physiologically to an explanation of basic phenomena of fertilization as well. That the phenomena agree with and have been proven by the facts of the distribution of sexes and of heredity. By the (phenotypically- and genotypically-caused) difference of the sexual tendency of the gametes, the urge for fertilization can to some extent be explained, because one can assume that with the development of sexually differentiated cells or nuclei, at the same time the tension is established that brings the extremely differentiated cells (gametes) to merger and brings about the resolution of the tension. Of course, such an account cannot and does not explain every stage of the phenomena of fertilization. It can and should mean only that the first triggering step of the whole chain of events that takes place in fertilization is always the establishing of sexual tension, and that this first link sooner or later, often causally connected with other factors of development, triggers the next steps (karyokinesis, reduction), which, as everyone knows, always follow each other in a certain sequence.”<sup>2</sup>

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<sup>2</sup> Hartmann, “Relativ Sexualität und allgemeine Sexualitäts- und Befruchtungstheorie,” *Naturwiss.* 19 (1931): 8-37, [quote from p. 36. Emphasis Reich’s.]

Thus, the general bisexual potential appears at the present to be the basic phenomenon to which the mechanism of distribution and determination of the sexes, as well as the problem of fertilization, can be reduced. However, as is so often the case with the solution of natural scientific problems, here to the solution of old problems raises a new, greater and deeper problem, and that is the question of the puzzling abilities of each organism and of each cell to develop in double-opposite directions, i.e. male or female, strong or weak; the alternative bisexual ability of reaction. We don’t know what this ability is based on, whether it is caused by genes or complexes of genes, like other characteristics of organisms. Much seems to weigh against such an opinion, and one could assume here that the basic function of the living cell, and thus of life, exists as assimilation and dissimilation. In any case, the ability is completely unknown and mysterious, and there’s also at first no path to be seen which might lead to the solution of this enigma. Research need not be scared away from this, however. Even a few decades ago it looked this way with the problems of fertilization and identification of sexes. It is necessary for the further clarification of this question to formulate some hypothetical ideas from comparative considerations of the phenomena, hypothetical ideas from which conclusions can be drawn which can be experimentally tested. (1:36-37).

Thus, positive and negative gametes form groups as soon as they are brought together in a culture medium; students of Hartmann, Moewus, and Jollos now try to explain how this group formation

comes about, and they come to the assumption that the gametes secrete “substances” of a specific kind into the fluid, substances which are absorbed by the gamete’s partner. Thus if one prepares by centrifugation a pellet of the + kind of gametes (the cells have been smashed) which contains no more gametes, and if one adds this pellet to the negative gametes, no grouping occurs. The negative gametes still swarm around. If, however, one adds to the pellet, instead of gametes, certain pure-cultured bacteria from common cultures, then group formation takes place exactly as if

one had brought together the two opposite kinds of gametes; of course no fertilization takes place. Also, in reverse, adding a pellet of smashed negative gametes to a culture of positive ones causes group and pair formation when pure-cultured bacteria are added. No group formation occurs, however, if one adds bacteria-containing positive supernatant to the + gametes, or bacteria-containing negative supernatant to the – gametes. Thus, Hartmann concludes that two “sexually specific substances” are secreted by the two kinds of gametes. Let’s first raise one fundamental objection to this. If such a sex-specific “substance” exists, then the fact of group formation, i.e. the mutual attraction, would still remain unexplained; because the substance could be just a specific vehicle of the attraction but not explain the attraction itself. Here the same objection is valid which the dynamic observation of nature raises to the explanation of hereditary phenomena by a given, fixed substance, and Hartmann himself doubts those explanations. They do not differ in

principle from the brain-mythological assumption, according to which thought is said to be in the form of certain imaginations and sensations localized in certain brain cells.

Hartmann, because of special experiments, comes to the conclusion that isogametes differentiate into + or – entities, so that hereditary opposite sexuality exists.

According to this assumption, only gametes of two different kinds can fertilize; their nature would be the difference of the sex-specific “substances”. I’ve already said why it seems to me that such an assumption is not only not a help, but actually a hindrance to a further solution of the problem. In this way Hartmann definitely disproves the stimulus-physiological assumption of Mainx and Pascher, according to which there exists only one kind of gamete which is said to differ as a result of different conditions of maturity, though the bipolar, two-sexed nature of gametes still remains to be explained. In experiments with bacteria, it’s striking at first that grouping in pairs also takes place in bacteria, though only under the condition that the medium is not a pellet of the kind of gametes used in the experiment, but of the omitted kind of gametes. The fact that bacteria are sufficient to cause the pairing can be explained as a phenomenon of electrolytes.

The A type of gametes + the B type of gametes + bacteria produces an electrolyte system with two terminals (borders) and one electrolyte: at first the gamete A’/ pellet of gamete B border, then the bacteria pellet border. Two borders are established at a time between two different organic substances. The

charge at the borders can ensue in both directions, therefore, so can the group formation. When the bacteria are absent, then no formation of the second potential surface occurs, and the group formation fails to occur, because according to all known presuppositions, gametes of the same kind, i.e. of identical tension and probably also of the same designation (+ or -), cannot form potential surfaces. The absence of group formation, in spite of the existence of bacteria in the pellet of the same kind, can be explained by the absence of potential surface gamete / electrolyte (pellet); thus the pellet must necessarily be of the same sort, which does not allow the establishing of a surface of a different tension, thus no group formation either.

As in the first case, where the potential surface bacteria / electrolyte is missing, so in the second case: gamete / electrolyte. This hypothesis must naturally be experimentally confirmed when it would become practically useful.

Yet, the assumption of sexuality as an electrical function is confirmed additionally by the application of the orgasm formula to the process of cell division, and by the experiments performed by me on the electrical function of sexuality (c.f. next communication).