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THE UNCUT SELF

DORION SAGAN
AND LYNN MARGULIS

*Speeches and books were assigned real authors,
other than mythical or important religious figures,
only when the author became subject to punishment
and to the extent that his discourse was considered
transgressive.*

M. FOUCAULT

Language, Counter-Memory and Practice

full circle, not based on the rectilinear frame of reference of a painting, mirror, house, or book, and with neither “inside” nor “outside” but according to the single surface of a Moebius strip. This is not the classical Cartesian model of self, with a vital ensouled *res cogitans* surrounded by that predictable world of Newtonian mechanisms of the *res extensa*; it is closer to Maturana and Varela’s conception of autopoiesis, a completely self-making, self-referring, tautologically delimited entity at the various levels of cell, organism, and cognition (Maturana and Varela 1973). It would be premature to accuse us therefore of a debilitating biomysticism, of pandering to deconstructive fashion, or, indeed, of fomenting an academic “lunacy” or “criminality” that merits ostracism from scientific society, smoothly sealed by peer review and by the standards of what Fleck calls a “thought collective” (Fleck 1979). Nor would it be timely to label and dismiss us as antirational or solipsist.

All such locutions stem from the mundane reason, the ethnocentric conception of self that precisely comes under question here. “The

philosophy of the subject,” writes Jürgen Habermas, “is by no means an absolutely reifying power that imprisons all discursive thought and leaves open nothing but a flight into the immediacy of mystical ecstasy” (Habermas 1987). On the one hand we position ourselves beyond the sixteenth-century European Enlightenment, its faith in reason, the arrogance of its secular priests, and the later Darwinian smarm. In this sense we have a poststructuralist, postmodern, nonrepresentational view of self. On the other hand, we dialectically question this position, motionlessly turning it inside out, as it were, and paying heed to the successes of scientific positivism and biochemical reductionism—movements that philosophically, cannot (at least provisionally) be disentangled from the pervasive influence of IndoEuropean grammar, subject-verb-object structures, and the like. In this sense, our view of the organism is less ontological and more biological; the order of metaphysics and physics, the primacy of philosophy over biology, undergoes a reversal more in keeping with the academic notions of self, and the anthological effort to enclose in a coherent, comprehensive, rectilinear manner. Membrane-bounded indeed.

But the membrane is no concrete, literal, self-possessed wall; it is a self-maintained and constantly changing semipermeable barrier. The idea of the semipermeable membrane permits us to jump organizational levels, from intraorganismic cell, to cellular organism, to organismic ecosystem and biosphere. Whether we are discussing the disappearing membranes of endosymbiotic bacteria on their way to becoming organelles, or the breakdown within the global human socius of the Berlin Wall, we must revise this rectilinear notion of the self, of the bounded I. Alan Watts pejoratively referred to it as the “skin-encapsulated ego”; indeed, even though so deeply entrenched, this bounded sense of “self” seems to us to be thoroughly natural—it is neither an historical or cultural universal. For example, the Melanesians of New Caledonia, known in French as the Canaque, are unaware that the body is an element that they themselves possess; the Melanesians cannot see the body as “one of the elements of the individual” (Leenhardt 1979). So, too, the Homeric epics never make mention of a body—the flesh-enclosed entity we today take for granted as the definable material self—they speak only of what we would think of as the body’s parts, for example, “fleet legs” and “sinewy arms” (Snell 1960). “The idea of the ‘self in a case’. . .,” writes Norbert Elias, “is one of the recurrent *leit-motifs* of a modern philosophy, from the thinking subject of Descartes, Leibniz’ windowless monads and the Kantian subject of knowledge (who

from his aprioristic shell can never quite break through to the 'thing in itself') to the more recent extension of the same basic idea of the entirely self-sufficient individual" (Elias 1978).

Psychoanalytically, the sense of self on the level of personhood has been construed to be a convenient fiction, an effect of infantile representation that is jubilant but essentially ersatz. (Etymologically, the word *person* means "to sound through"; coming from the Greek *persona*, it refers to a dramatic mask with a speaking hole.) According to Lacan (1977), the jubilation that creates the essentially false and paranoid ego in the infant occurs when its gaze confronts the image of a fully contoured and coordinated body at the very time (six to eighteen months) it is beleaguered by a motor incapacity that renders it more helpless and defenseless than perhaps any other mammal of the same age. The intense motor incapacity and uncoordination, resulting from "prematurization" (or, in evolutionary terms, from neoteny), engulfs the infant in an almost cinematographic world of uncontrollable visions. One of these mystic-like visions is of itself (or the mother) with a coordination and in a place where it does not in fact exist, along the rectilinear mirror plane. This form of mystical identificatory representation with an image or imago Lacan designates as "image-inary." As a fictional form of the I, it is comforting and effects the discrete sense of self from toddler on into adulthood, the sense of self that has been catered to by American ego psychology in contradistinction to the original Freudian insights and painstaking deconstructions of a psyche (psycho-analysis) formerly presumed to be whole. The Lacanian psychoanalytic revamping of the myth of Narcissus suggests that what we perceive to be our body, as the locus of our "self," is in fact plastic, malleable; and indeed, the lability of the imaginary view of self has come to the fore in the first technology-mediated glimpses of a new image of the human body: Earth from space (Sagan 1990b). This rapidly proliferating image, now recognized as our ecological or biospheric home, will, with further population growth, interspecies interdependencies, and optimization of global media, begin to be re-cognized as body.

Already the shift from biosphere-as-home to biosphere-as-body has become apparent in the scientific work of James E. Lovelock, whose Gaia hypothesis, with mythical allusions of its own, has inspired a planetary search for "geophysiological" climatological and biogeochemical mechanisms (Sagan 1990a). Biospheric individuality was already recognized by Julian Huxley, who wrote:

the whole organic world constitutes a single great individual, vague and badly co-ordinated it is true, but none the less a continuing whole with inter-dependent parts: if some accident were to remove all the green plants, or all the bacteria, the rest of life would be unable to exist. This individuality, however, is an extremely imperfect one—the internal harmony and the subordination of the parts to the whole is almost infinitely less than in the body of a metazoan, and is thus very wasteful; instead of one part distributing its surplus among the other parts and living peaceably itself on what is left, the transference of food from one unit to another is usually attended with the total or partial destruction of one of its units (Huxley 1912).

As positivists, materialists, or physical reductionists in the western scientific tradition, we would like to think that the picture of the body as an adequately closed topological surface is necessary and sufficient *prima facie* self-evidence—for the self. And so it is within a certain rectilinear closure. However, as we—and even this coauthorial “we” must be put in quotation marks as we ponder the self, the subject, person, etc.—intimated, the egotistic I is clear only in the sense of a fundamentally fictional or topologically displaced mirror image; there is nothing behind the mirror. Emphasizing tactility rather than vision, on a sensual level it is easy to imagine a conception of the human environment as beginning with the fingernails, hair, bones, and other substances no longer considered to be body parts because they are bereft of sensation. Conversely, technological introjection exemplified by devices such as tele-vision (video, movies, etc.) and tele-portation (automobiles, airplanes, and so forth) suggests a topological extension of the human into what formerly would have been considered the environment. Therefore the body, the material or corporeal basis for “self,” has no absolute time-independent skin-encapsulated topological fixity. It is a sociolinguistic psychoanalytic evolutionary construct. Mucus, excrement, urine, spittle, corpses, pornography, and other detachments from and marginal representations of the human body call its essential hegemony, its universal nature, into question.

Chastising the Spanish artist for painting unrepresentative cubistic abstractions, a layman withdrew a photograph of his wife from his pocket, and held it up to Picasso with the admonition. “Why can’t you paint realistically, like that?” “Is that what your wife really looks like?” Picasso asked. “Yes,” replied the man. “Well, she’s very small, and quite flat.” Our

working assumption of what the self is—like the layman's view of what his wife "really looks like"—is based on a model of representation that takes far too much for granted. Representation itself has, in postmodernist philosophy, fallen into disfavor in a manner similar, perhaps, to that in which figurative realistic painting fell into disfavor with the innovation of the camera. This does not mean that the possibilities of representational or propositional truth, of the correspondence theory of reality still so entrenched in science, is necessarily dead; on the other hand, the difficulties posed by the evidence of quantum mechanics, not least of which is the philosophical nonsolution of the Copenhagen interpretation of the structure of the atom, suggest that most scientific models of reality may be neither so enlightened nor *au courant* as they assume. Indeed, what is in question is the very possibility of modeling reality at all.

Psychoanalytically, when we broach the topic of castration, amputation, dismemberment, the infant's polymorphic perverse sensations and perceptions of the body being, as in a picture by Hieronymus Bosch, in bits and pieces, is probably close to the true state of nature, if such a state there be. In other words, the infant's primordial presocialized experience of the world should not be considered inaccurate but rather, precisely because it precedes sociocultural linguistic norms, less prejudiced and potentially more "realistic." And, apart from parturition, there may be a biological basis for these perceptions, which, later in life, are recalled as amputation, castration, dismemberment. Permitting ourselves a wee bit of abstraction here we splice in a couple more comments by Huxley:

. . . certain bits of organic machinery are of such a nature that it is physically impossible for the animal to live at all if they are seriously tampered with. It is just because our blood-circulation is so swift and efficient and our nervous system so splendidly centralized that damage to heart or brain means almost instant death to us, while a brainless frog will live for long, and a heart-less part of a worm not only will live but regenerate. Thus here again sacrifice is at the root . . . and only by surrendering its powers of regeneration and reconstitution has life been able to achieve high individualities with the materials allotted her. . . . We have seen the totality of living things as a continuous slowly-advancing sheet of protoplasm out of which nature has been ceaselessly trying to carve systems complete and harmonious in themselves, isolable from all other things, and independent. But she has never been

completely successful: the systems are never quite cut off, for each must take its origin in one or more pieces of previous system; they are never completely harmonious (Huxley 1912).

Given the abiding prevalence of an image-inary or representational world view in Western science, it is impossible to overestimate the theoretical importance of this relatively abstract, nonrepresentational splicing or grafting that crosses cellular, species, and taxonomic boundaries. Light, no less than matter, cannot be understood simply as a collection of particles but must also be comprehended as a wave: with quantum mechanics the Democritean atomistic Newtonian world view has come to a functional end, although the momentum of scientific discourse has prevented it from reckoning with the consequences of this theoretical shipwreck.

Comparable with the end of the Newtonian age in physics, evidence of the dwindling of an atomistic model of organismic identity in the biological realm is reflected by the debate over the essential unit of selection in Darwinian evolution, whether it is really genetic, the gene—*inside* the organism—or the “individual” competing organism—as Darwin stressed—or group levels such as species or multicellular assemblages. Hierarchy theory entertains species and multicellular assemblages—extended phenotypes *outside* the organism and beyond the traditional confines of the self—to be the crucial units of selection (Dawkins 1982). Certainly the paradoxical notion of group selection seems necessary to explain epochal evolutionary transformations such as those from protoctist colonies to the first plants, animals, and fungi.

The minimal autopoietic, or living, system is the membrane-bounded cell. A cell, or any other autopoietic entity of even more complexity, undergoes continual chemical transformations easily recognizable as “being alive.” In the process of this ubiquitous metabolism, each living entity is materially contained within at least a membranous boundary of its own making. In addition to the universal plasma membrane of all living cells, other boundaries, for example, skin, theca, or cuticles, may be self-produced. Such borders include the black, smooth skin of humpback whales, the glycocalyx of some amoebae, the hard overwintering thecal coat of hydra eggs, or the waxy cuticle of a cactus. Minimally the autopoietic unit produces the plasma membrane but often cells and organisms make cellulosic walls, coccoliths, or siliceous spines—complex material extensions found just outside, adjacent, or attached to the universally required membrane. All autopoietic entities continually con-

struct, adjust, and reconstruct these dynamic physical structures by which they are bounded.

We recognize autopoietic entities as “individuals,” or “individual organisms.” A tree, a potted plant, a swimming euglena, and a cat are immediately perceived as single living organisms. Minimally, all such autopoietic entities are comprised by at least one genomic system: a DNA-containing genome (that is, the sum total of all the genes of the organism) and the RNA-driven protein-synthetic, ribosome-studded internal cellular apparatus associated with that genome.

What is the lowest common denominator of individual life? The minimal autopoietic entity, a single genomic system, is a bacterial cell. Bacteria contain chromonemal DNA, that is, DNA uncoated with histone protein, that codes, via RNA, for an accompanying protein synthetic system itself comprised of RNA and protein. This interacting, metabolizing unit of perhaps some 3000 identifiable genes and proteins bounded by dynamically changing membrane makes and is the bacterial genomic system. Live bacterial cells are single genomic entities in this sense. Whereas single-celled bacteria, uninfected with viruses or plasmids, are comprised of single genomic systems, those so infected have supernumerary genomes—both large (chromonemal) and small replicons (viruses, plasmids). Multicellular bacteria, for example, *Polyangium*, *Fischerella*, *Arthromitus*—there are myriads of them—comprised of many copies of the same genomic system, are thus polygenomic. Filamentous, tree-shaped, branched, or spherical colonies, such organisms are comprised of homologous genomic systems in direct physical contact with each other. In some cases, like swarms of cyst-forming myxobacteria (for example, *Chondromyces*, *Myxococcus*), the component genomes sense each other and fuse, forming a larger structure—no membranes are breached. In others, as when the akinetes of a cyanobacterium float away, the genomic systems disperse. Multicellular bacteria—*Stigmatella*, *Fischerella*, and the like (Figure 5.1)—are polygenomic beings in which each of the comprising genomic systems, each of the cells, has very recent common ancestors.

All organisms of greater morphological complexity than bacteria, that is, nucleated or eukaryotic organisms (whether single or multicellular), are also polygenomic, having selves of multiple origins (Table 5.1). All these “selves,” comprised of heterologous (different-sourced) genomic systems, evolved from more than one kind of ancestor. Because the organelles (nucleocytoplasm, mitochondria, plastids, and so forth) of eukaryotic cells had independent origin among the bacteria, any such cell—any



A



B

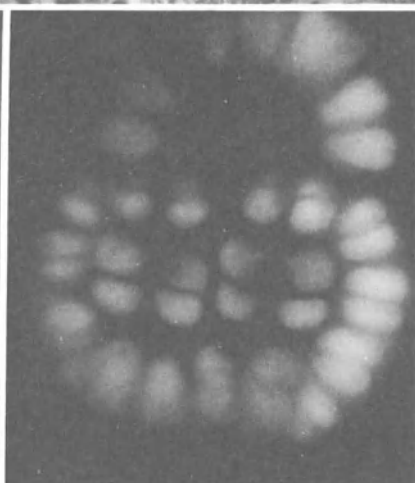
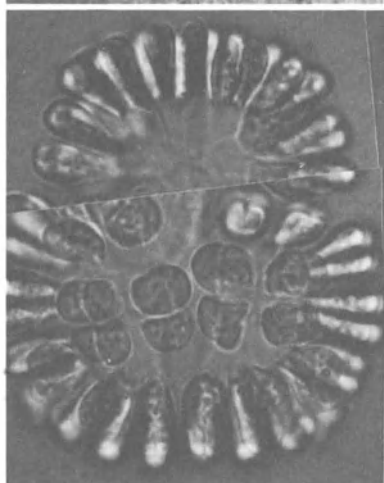


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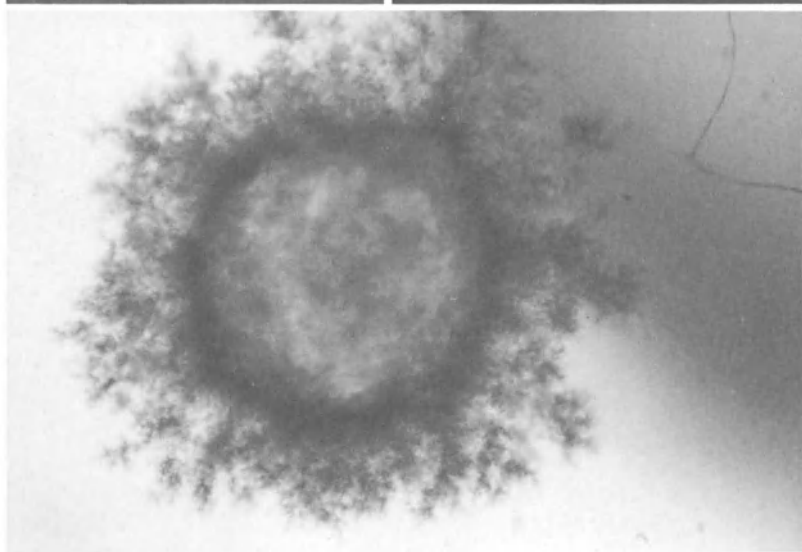
FIGURE 5.1. Multicellular bacteria: examples. (A) *Stigonema* sp., a cyanobacterium from the Alps grows in patches like plants. (B) *Stigmatella* sp., a heterotrophic soil myxobacterium. The single cells are capable of producing new “treelike structures.” (C) *Arthromitus*-like gram-positive spore-forming symbiont from the termite gut shows true branching because single cells are capable of growth at three different sites on the surface. (D,E) Microbial mat *Gomphosphaeria*, a cyanobacterium from a microbial mat environment, lacks a single cell stage: it forms these colonies, which reproduce by fragmentation of the entire colony into two smaller, roughly equal colonies (the light micrograph taken with fluorescence microscopy on the right indicates the distribution of chlorophyll). (F) Unidentified heterotrophic colonial organisms in which the entire colony fragments into two. It is likely that most bacteria in nature are multicellular.



D



E



F

Table 5.1. Multiple Origins of Self in Evolution^a

Ancestral Bacteria	Extant Organelles or Organs	Hypothetical Minimum Number of Genomes	“Individual” Organisms
<i>Thermoplasma</i> (archaeo-bacterium)	Nucleocytoplasm	2	Eukaryotes: anaerobic protists
<i>Spirochaeta</i> (eubacterium)	Kinetosomes, cen- trioles, microtubule organizing centers	2	Eukaryotes: anaerobic protists ^b
Respiring eubacteria	Mitochondria	3	Most heterotrophic eukaryotes (with mitochondria)
Cyanobacteria	Cyanelle	4	<i>Cyanophora</i> , <i>Glaucozystis</i> , <i>Cyanidium</i>
Cyanobacteria (<i>Synechococcus</i>)	Rhodoplast	4	Red algae
Chlorobacteria (<i>Prochloron</i>)	Chloroplast	4	Green algae, plants
Sulfide-oxidizing eubacterium <i>Vibrio fischeri</i>	Thiosome, trophosome	5	Vestiminiferan, tube worms ^c
Carotenoid- producing eubacterium	Red nidemental gland	5	<i>Loligo</i> (squid)

^aFor technical details of integrations of genomic systems in endosymbiotic origin of eukaryotic cells see Margulis (1993); for nontechnical, Margulis and Sagan (1996, 1997).

^bMargulis (1991c).

^cVetter (1991).

eukaryotic genomic system—must be comprised of heterologous parts. Each component cell is derived as a chimera; ultimately it emerged from a diversity of bacterial ancestors with only remote common ancestry. In a plant cell, for example, the ancestor of the mitochondria is only remotely related to that of the chloroplast—both descend from gram-negative photosynthetic bacteria with complex respiratory pathways. Neither mitochondria nor plastids are very related to the nucleocytoplasm in which they are embedded. The nucleocytoplasm itself is of archaeobacterial an-

cestry. Such polygenomic eukaryotic systems are intrinsically and unambiguously chimeric, always enclosed within membranes of course, and often within other self-produced structures that lie external to these membranes. In order to qualify as an autopoietic entity, that is, as an individual organism, any such material-metabolizing entities must be bounded by membranes made by their own metabolism. Biologically, any individual is minimally a metabolic system, made of, in some cases, many genomic entities, hetero- or homogenomic, but all are always bounded by a single, continuous covering. The breaching of the boundary signals disintegration or loss of autopoietic status.

We now see a possible correspondence of the “sense-of-self” to “autopoietic entity” or “live individual.” All individuals, all living organisms actively self-maintain. From the early Archean Eon (3500 million years ago) and its bacterial inhabitants through the protists of the Proterozoic Eon (2500 to 520 million years ago), and the fungi, plants, and animals of the Phanerozoic Eon (520 million years ago to the present), the “sense-of-self” seems synonymous with the nature of autopoiesis; boundaries resist breaching while biochemistry acts to maintain integrity. It is the nature of life to interact with the material world to incessantly integrate its components, rejecting, sorting, and discriminating among potential food, waste, or energy sources in ways that maintain organismal integrity.

What is remarkable is the tendency of autopoietic entities to interact with other recognizable autopoietic entities. These interactions may be neutral, as in an amoeba and a pebble; that is, no obvious reaction may occur at all. Two approaching organisms may be indifferent. Alternatively, two heterologous organisms may be destructive—disintegrative—towards each other. One, for example, may produce extracellular enzymes that destroy the other and, relieving it of its autopoiesis, break it down to component metabolic parts. The resulting chemical breakdown products may then be used as food in a trophic relation whereby the still-intact autopoietic being consumes and incorporates the chemical components of its victim. Though relations between organisms may be disintegrative or neutral, those interactions between autopoietic entities that lead beyond destruction to integrative mergers we find to be the most fascinating. Such mergers (fertilization, partner integration in symbiosis) lead to autopoietic entities of still greater complexity. For example, the integration of a fungus attacking an alga for nutrients often—perhaps 25,000 times—has led to a balance between the disintegrative responses of both fungal and algal partner. Eventually a lichen emerges. A lichen is neither a fungus nor an

alga—as a “lichen” it is a composite symbiotic complex that itself is an autopoietic entity at a more complex level of organization. The scholars and botanists are not incorrect in naming the lichen a plant—even though, lacking embryos within maternal tissue, one today would not place lichens within the plant kingdom in any classification scheme. In every level of biological organization from beyond bacteria toward the present, the “sense-of-self” can be inferred from the integrating and discriminating chemical and motility behavior of the components of what we, after the fact, recognize as the individual organism.

An amoebae, *Paratetramitus jugosus*, with a vacuole is shown in Figure 5.2. In the vacuole are two entities. One, interpreted to be a bacterium, is in the process of being broken down, digested, and reutilized as food for the amoeba. Given the terms developed above we can say that the food bacterium, as a disintegrating homologous genomic system, is present in the vacuole. The second structure, a propagule (p), probably a “chromidium,” an integrated heterologous genetic system (nucleocytoplasm plus mitochondria) is seen on its way outside the cell. Chromidia are interpreted to be very immature amoebae, that is, stages in the reproduction of these free-living amoebae of the vahlkampfid sort (Dobell 1913; Wheery 1913; Margulis, Enzien, and McKhann 1990). (Vahlkampfids are members of a family—Vahlkampfiidae—of small shell-less “monopodial”—or “one-foot” amoebae. They tend to slowly streak forward rather than move simultaneously in many directions or form an exuberance of spines—as other amoebae do.) Thus, at the amoeba level of biological organization, “self” inside the same cell—indeed, inside the same vacuole of the same cell—can already clearly be distinguished from “food.” Inspection of the microbiological literature shows, in fact, “sense-of-self” awareness is already present in the virus-infected bacterial world.

Although cell-to-cell mergers are conspicuously lacking in all interacting bacteria, such prokaryotes do accept—take into their membrane-bounded bodies—single genomes in the form of chromosomal DNA: plasmids, viruses, phages. Such DNA is transferred after cell contact directly from a second cell or from the fluid medium. The DNA, from syringe-like bacteriophages—may be forceably ejected through the bacterial membrane. Membranes from more than a single bacterial cell may touch, but they never open to accept another live, bacterial being. The only types of bacteria known to be capable of penetration of the membrane of a second bacterium prey on and destroy that second bacterium. Predatory behavior involving the breaching of membranes, destruction,

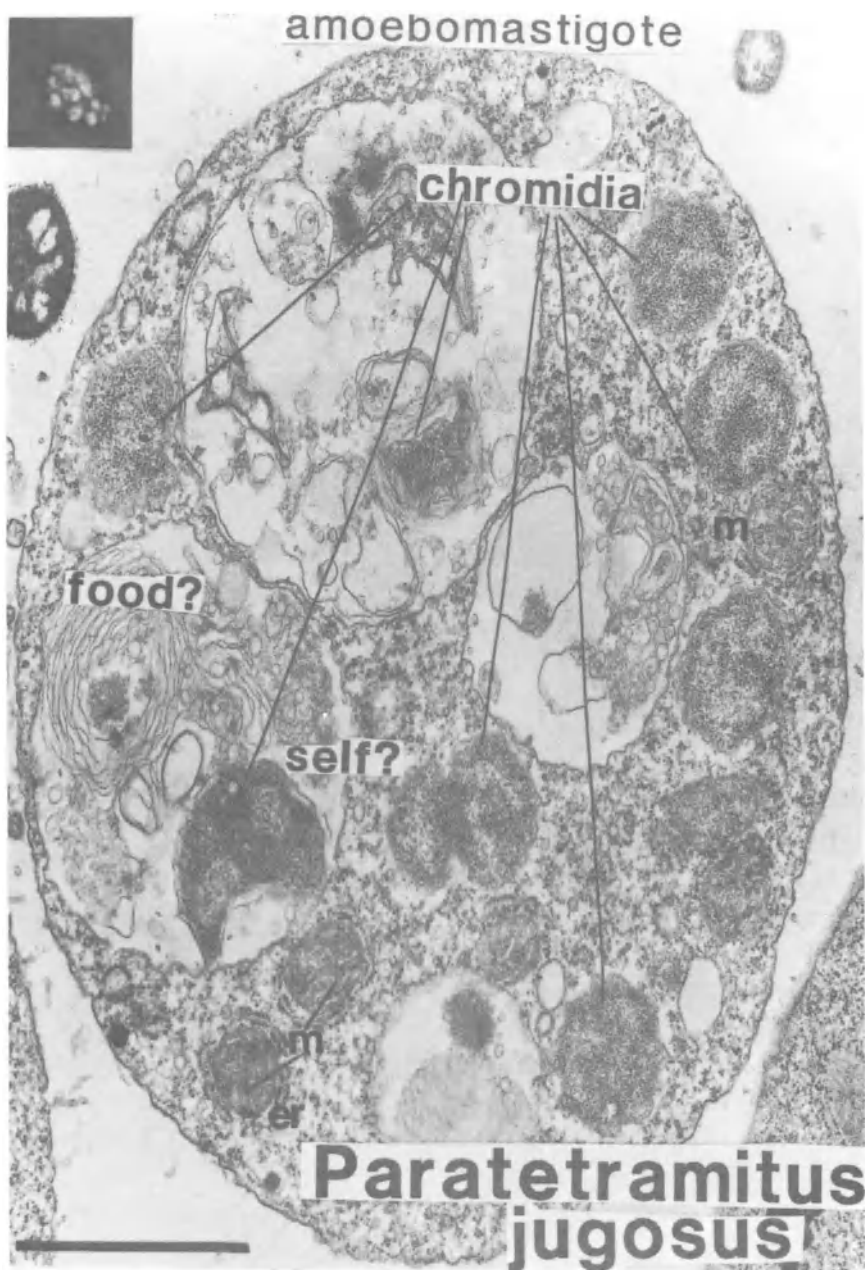


FIGURE 5.2. Food remains of bacteria can be distinguished from structures interpreted to be chromidial propagules (p) in a single vacuole of *Paratetramitus jugosus*, an amoebomastigote taken from a Baja California microbial mat. Perhaps the presence of membrane around the chromidium provides the signal to resist digestion of “self.” Electron micrograph in which bar = 1 μM ; m = mitochondrion, er = endoplasmic reticulum surrounding the mitochondria. At upper left is a comparable photo of the live organism, apparently releasing chromidia. See Margulis, Enzien, and McKhann, 1990 for details.

and the inevitability of their death is characteristic of *Daptobacter* and *Vamprococcus* attacks on *Chromatium* or *Bdellovibrio* assaults of *Spirillum serpens*, for example (Guerrero et al. 1987), in undestructive encounters only naked DNA slips through the membrane of one bacterial cell to another, changing its genes, with health and survival of the recombinant as the outcome. Because a virus-infected bacterium becomes immune—it resists superinfection by the same sort of virus—there can be little doubt that an integrating sense-of-self already protects uncontrolled loss of autopoiesis—resistance to death—among the world’s smallest creatures. Antigens, parts of proteins, appear on the surface of virus-infected bacteria, signalling to the outside world that these bacteria harbor the viral genome. Although other viruses may attach and even enter the already-infected cell, the humble “immune system” of the bacterium refuses to replicate the new virus, which then is lost. Thus signs and signals, self-identification, occur already in prokaryotes, of which the human being represents (if we can still use this word) a kind of massive, three-dimensional pointilist elaboration.

With regard to the later-day three-dimensional pointilist elaboration of the arcane immunity of virus-infected bacteria, we are admonished to ponder the connections. The AIDS-infected human differs little—in principle—from the *E. coli* bacterium infected with lysogenic bacteriophage. The “independence” of the nervous system (mind) from the immune system (body) is severely questioned. Candace Pert defiantly speaks only of bodymind or mindbody. Interviewed by her friend Nancy Griffiths-Marriott, she points to an overemphasis of the blood–brain barrier and the model of the nervous system as a network of penetrating, penile-shaped cells that control the body. Pert emphasizes that monocytes cross that “barrier” within seconds; furthermore, these cells of the immune system transform to become the glial cells of the nervous system. (Glial cells are ten times more abundant than neurons in the mature nervous system). Like gut and brain cells, such monocytes bear neuropeptide receptors—surface proteins—sensitive to the endorphin peptides—natural or endogenous drugs inside the individual—of the neuroimmune system that bring on feelings of elation and ecstasy. Neuropeptides, small communicative molecules, include vasointestinal peptides and endorphins that signal to monocytes. Such protein-like molecules attach to the cell receptors at the surface of gut or brain or monocyte cells at the same place the AIDS virus gets stuck. No, says Pert, there is no mind/body, controller/controlled, male/female, neuron/glial cell dichotomy. Rather there is

“mindbody-bodymind,” a dynamic system kept informed by devastating news, transforming monocytes, neuropeptide messengers—and hundreds of other integrating mechanisms that confirm the mobile self (Pert and Griffiths-Marriott 1988).

Beginning as latter-day evolutions of bounded endosymbiotic bacterial communities we—as densely packed biomineralizing complexes of eukaryotic cells—should not be too sanguine about the longevity of the modern notion of self. Already in the nineteenth century Samuel Butler clearly and successfully deconstructed personality by parasitizing Charles Darwin’s texts. Between the ovum and the octogenarian, held Butler, lie differences greater than those between human beings and other species. What with the vagaries of memory and experience, it is essentially arbitrary to believe that the zygote and the eighty year old are the same person, whereas the father and the son have different selves. Genotypically we may argue with Butler, but to do so phenotypically would be a far more difficult chore. Butler demonstrates the essential arbitrariness of our definitions of organismic identity, of organic integrity and “individuality,” even more strikingly by taking the case of a moth. Here we have a being, Butler says, that undergoes radical bodily change between egg and chrysalis, between pupa and winged insect; and yet the only time we say it dies is after the adult moth form stops moving its wings, despite the other radical phenotypic changes during which the genotype has nonetheless been preserved. We might as easily, Butler reminds us, have chosen to consider the transfer from egg to chrysalis or from chrysalis to moth as “death”—and construed the demobilization of the moth as a sloughing-off similar to the shedding of a skin. Indeed, to seriously consider death at all entails a certain ignorance—a certain disregard for the continuity of the “personality” (let us not be too quick to say germ cells, and to invoke the same philosophy of the subject, the self, at a deeper level) despite its radical transformations. So you see that with this figure in which the moth’s “self” is held aloft on the tenterhooks of quotation marks “we” have provisionalized identity—not least of all by avoiding the traditional figure of the rectangle that enframes the essay, representing thoughts in an enclosed form that seems to mirror the hegemony of a rigidly structured Platonic body. Topologically the self has no homunucular inner self but comes

