CHAPTER 1

Science and social thought: The rise of organic theory

George Eliot opens her final novel, *Daniel Deronda*, with a reflective epigraph that links the practice of writing to that of science:

> Men can do nothing without the make-believe of a beginning. Even Science, the strict measurer, is obliged to start with a make-believe unit, and must fix on a point in the stars' unceasing journey when his sidereal clock shall pretend that time is at Nought.

While it is scarcely surprising that George Eliot, with her noted interest in positivism, should draw a comparison between her own procedures and those of a scientist, the actual basis of the analogy is rather startling; the comparison rests not on the common commitment of the novelist and scientist to the objective recording of external fact, but on their shared need for imaginative construction. The observation clearly suggests the radical changes that had occurred in George Eliot's theories of scientific and fictional practice since her first novel. In *Adam Bede* she adhered to the methodology of natural history; the artist, like the natural historian, was to be guided not by theory or imagination, but by concrete observation. His function was to record, to describe truthfully what he saw. This creed of realism, with its naive view of truth, is based on the belief that the novelist, like the scientist, records a pre-given world. The opening epigraph of *Daniel Deronda*, with its reference to the "make-believe of a beginning," clearly challenges this conception. The scientist does not merely record; he actively constructs a schema within which his observations are placed. Such an act of "make-believe," or heuristic construction, threatens the comforting conception of science as the unquestionable transcription of the unchanging external world. This transformation in George Eliot's theory of scientific method and fictional practice can be correlated with her developing understanding of the social and scientific aspects of organic theory.

George Eliot's concern with ideas of organic social unity is not peculiar to her work, but rather links her thought to that of the major

authors of her age. Social theorists and writers throughout the nineteenth century, from Coleridge and Wordsworth to Carlyle, Arnold, and Dickens, display a similar preoccupation. They are not, however, simply adhering to an age-old model of social development. Although comparisons between the human body and society occurred in Aristotle, Livy, Shakespeare, and Hobbes, all these analogies were fundamentally static and mechanistic and thus qualitatively distinct from those that emerged in the late-eighteenth and early-nineteenth centuries. Hobbes, for example, alternately compared the state to a body and to a watch; society, like a machine, was conceived as an artificial aggregate of discrete units in which the whole equalled the sum of the parts.[1] Such a model could not account either for growth or change or reciprocal interaction between the individual and the social whole. In contrast with the Hobbesian view, the idea of organic order to which George Eliot and her contemporaries adhered was a dynamic one, based on recently defined principles of physiological life.

At the close of the eighteenth century a revolution occurred, not only in the social order, but also in the natural and social sciences as the mechanistic cosmology of the preceding two centuries was overthrown. Models of explanation in scientific, social and psychological theory had, until this era, been based on mechanical laws of association. As Walter Buckley argues,

> Man was regarded as a physical object, a kind of elaborate machine, whose actions and psychic processes could be analyzed in terms of the principles of mechanics. In "social mechanics," society was seen as an "astronomical system" whose elements were human beings bound together by mutual attraction or differentiated by repulsion; groups of societies or states were systems of balanced oppositions. Man, his groups, and their interrelations thus constituted an unbroken continuity with the rest of the mechanistically interpreted universe. All were based on the interplay of natural causes, to be studied as systems of relationships that could be measured and expressed in terms of laws of social mechanics.[2]

Thus, in the physical sciences, the naturalist Buffon viewed the organism as an association of parts whose movements could be interpreted according to the Newtonian mechanical laws of attraction, while Hume applied similar principles to explain the formation of ideas.[3] In social philosophy, theorists of the French Revolution employed the principles of association to explain the composition of society. The idea of association implies the coming together of separate parts and, for the Ideologues, society was just a collection of separate individuals, an artificial structure which, they believed, could be trans-

formed by the rational action of men. The physiological and social principles of organic life first formulated in the last decades of the eighteenth century explicitly challenged this belief.

In 1790 Kant proposed in *Critique of Judgment* the now-classic definition of the organism as a whole in which each part is reciprocally means and end. This definition gave expression to a principle of causality which was to dominate the life sciences and social philosophy of the nineteenth century.[4] In both spheres the premises of associationism were overturned. Theories of organic interdependence now replaced those of free association, and interest in dynamic historical processes supplanted the earlier dominant preoccupation with quantitative measurement. Hitherto the natural sciences had been dominated by natural history, a science which focused on organic and inorganic phenomena alike, and was concerned with the measurement and classification of the visible surface of nature. With the development of biology, a science devoted exclusively to the study of life-processes, scientists turned their attention away from the fixed details of external form to focus on the principles of internal organisation and the laws that governed historical development.[5] The organism was no longer viewed simply as an association of organs. No element was autonomous; rather, each owed its form to its role and position within the development of the whole.

Following the upheaval of the French Revolution, European social theorists of all political persuasions turned to these principles of organic life for a model of social order. The nature of the state, Burke had contended in *Reflections on the Revolution in France*, is essentially organic; revolutionary action disrupts the natural processes of historical growth. His theories directly influenced the *Naturphilosophen* in Germany, while in France fundamentally similar arguments were offered by the conservative theologians de Maistre and de Bonald and by the later, more liberal, Comteans.[6]

Despite these thinkers' differences in political perspective, all were united in their opposition to the Ideologues' theory of society and the psychological subject: to the conception of the social contract, and the doctrine of equality and natural rights. The idea of organic interdependence and growth suggested a different theory of the "natural." The fundamental attraction of the organic conception lay in the fact that it appeared to offer a model that could reconcile the eighteenth-century ideals of individualism with the newly perceived demands of social order. On the historical plane, the idea of organic growth –

development linked to stability of form – appeared to fulfil the demands of both historical change and continuity. Rejecting the atomism of eighteenth-century philosophy, organic theorists stressed the interdependence of the whole, rather than the freedom of the parts, and the necessity for gradual cumulative growth rather than the infinite potentiality for change.

George Eliot adhered throughout her life to these principles of organic social theory. The first clear assertion of her belief occurs in her essay, "The Natural History of German Life" (1856), in which she observes that society is "*incarnate history.*"[7] Though ostensibly outlining Riehl's views she is obviously in clear agreement with his belief that any attempt "to disengage [society] from its historical elements must . . . be simply destructive of social vitality."[8] Like Burke or Comte, she believes that society is not an artificial creation of men, but an organic whole whose laws of natural growth must be observed, for "What has grown up historically can only die out historically, by the gradual operation of necessary laws."[9] Organicist theories of historical development underlie the central moral and social questions George Eliot explores in her work. In a notebook essay on "Historic Guidance" she focused her discussion on the need for "*Continuity* (in human history) and *Solidarity* (in the members of the race)."[10] Her categories are drawn from Comte's definition of the consensus of the social organism which extended, he argued, to a feeling of Solidarity in the present, and a sense of Continuity with the past.[11] These two concerns structure all George Eliot's fiction, whether she is dealing with Maggie Tulliver's relations with the evolving life of St Ogg's, Romola's commitment to Florence, or Daniel Deronda's bond to his Jewish heritage.

The influence of organic theory can also be discerned in the moral categories of George Eliot's fiction, particularly in her preoccupation with the evils of egoism and the virtues of social duty. Theorists of the Revolution had stressed the importance of social equality and individual rights; but, under the light of the organic analogy, ideas of individualism were revealed to be related to a socially disruptive, and thus morally reprehensible, egoism. The doctrine of rights associated with the upheaval of the French Revolution was now replaced by one of social duties. Thus the German philosopher Johann Fichte argued, in the *Principles of Natural Right* (1791), that the distinction between an isolated man and a citizen was like that between the parts of an inorganic object and those of an organic body: "In the organic body each part constantly maintains the whole, and is in maintaining

the whole thereby itself maintained, just so stands the citizen in relation to the state."[12] The principle of natural right was thus transformed to that of social duty, while the doctrine of individual interests was replaced by one of social functions. Despite the gulf which separated German Romanticism from French Positivism, Comte offered similar arguments. In the true organic society, he observed, "the vague and stormy discussions of rights would be replaced by the calm and precise discussion of duties."[13] In her novels, George Eliot sought to find the precise nature of this duty, to weigh the relative claims of individual rights and social demands. Daniel Deronda, in his longing for "some ideal task, in which I might feel myself the heart and brain of a multitude – some social captainship, which would come to me as a duty, and not be striven for as a personal prize" (Ch. 63, III, 315), articulates the value schema of all the preceding novels. Whether explicitly, like Felix and Savonarola, or implicitly like Dorothea and Maggie, all George Eliot's protagonists search for a form of social duty that would make them an organic part of social life and yet would avoid the taint of egoism or individualistic self-seeking.

In the positivist philosophy of Comte, George Eliot discovered apparent scientific foundations for a theory of social duty. Positivism, as Lewes explained, "aims at creating a Philosophy of the Sciences as a basis for a new social faith. A social doctrine is the *aim* of Positivism, a scientific doctrine the *means*."[14] George Eliot, like Comte, Lewes, and Herbert Spencer, found her articles of faith in the belief that the growth and interdependence of society – the social organism – are governed by the operation of the same immutable laws that govern physiological life. In her 1851 review of Mackay's *The Progress of the Intellect*, she communicates the excitement felt by so many of her contemporaries at the recognition "of undeviating law in the material and moral world – of that invariability of sequence which is acknowledged to be the basis of physical science, but which is still perversely ignored in our social organization, our ethics and our religion."[15] From this "invariability of sequence" she draws her understanding of "that inexorable law of consequences, whose evidence is confirmed instead of weakened as the ages advance." "Human duty," she concludes, "is comprised in the earnest study of this law and patient obedience to its teaching."[16] This doctrine of consequences is evident in the moral structure of her novels and clearly underlies the nemesis that pursues Hetty and Arthur, Godfrey Cass, Tito, Bulstrode, and all other characters who do not dutifully consider the social consequences of their actions. The premises of the

doctrine are later articulated by George Eliot in her famous conversation with F. W. H. Myers, when, taking "the words *God*, *Immortality*, *Duty* – [she] pronounced, with terrible earnestness, how inconceivable was the *first*, how unbelievable the *second*, and yet how peremptory and absolute the *third*. Never, perhaps, have sterner accents affirmed the sovereignty of impersonal and unrecompensing Law."[17] Reified scientific law has taken the place of the theological word as the source of a prescriptive morality.

Though avoiding the worst excesses of her contemporaries' enthusiasm for the moral functions of scientific law, George Eliot does fall partially into the mistake, described by John Stuart Mill, of confusing the idea of a "Law of Nature," denoting observed uniformities in the occurrence of phenomena, with the ethical interpretation of "Law" as expressing "what ought to be."[18] Her conviction that science could provide the moral foundations for a theory of duty does not, however, simply reflect the decline of her religious belief. Transformations in the sciences of the period made her position possible; for, with the decline of belief in the self-evident order of the world, scientists turned from mere taxonomy to analysis of the laws that governed the processes of historical growth. The rise of faith in science accompanied this development.

The Victorians' tendency to refer to science as if it were a defined and coherent entity reflects their desire to treat it as an unproblematic source of authority. Such an assumption obscures, however, the social origins and diversity of practice of nineteenth-century science. Thus, for social theorists like Comte, Spencer, and Lewes, science was not just a uniform demonstration of law to be raided for the validation of their social beliefs. Indeed, the development of their social theories went hand in hand with that of their physiology. Comte, for example, in outlining the physiological principles upon which he founded his theory of organic social life, became, in the eyes of his later admirer the scientist, Claude Bernard, one of the great innovators in biology.[19] Far from simply appropriating a pre-defined scientific model of organic life, he actively contributed to the evolution of both social and scientific theory.

Victorian intellectuals in all spheres were intensely interested in the social ramifications of the new scientific theories. In an essay on "The Scientific Movement and Literature," the literary critic Edward Dowden draws out what he believes to be the decisive implications of the scientific discoveries of the era. Evincing the same admiration as

George Eliot for the "regularity of sequence" manifest in the world, he draws the same conclusion that these physical processes actually reveal a moral order: "But not only is nature everywhere constant, uniform, orderly in its operations; all its parts constitute a whole, an *ensemble.* Nothing is added, nothing can be lost."[20] Dowden, like most of his contemporaries, assumes that the regularity of the operation of physical law actually guarantees the mode of transformation. He takes no account of the possibility of laws governing sudden or disruptive change but assimilates notions of universal physical law directly within the social perspective of gradualism and orderly organic growth. Physical law is also used to reinforce the social doctrine of organic unity. Dowden draws on the principles of the conservation of energy that were, in 1847, extended by Helmholtz to the sphere of organic life, to sustain a theory of moral coherence throughout the natural and social realms.[21] From this argument it is but a short step to Dowden's moral conclusion that science, as it reveals the unity of the physical and social world, also declares "with increasing emphasis that duty is social."[22] Like Comte, Dowden uses science to reinforce the organicist doctrine of the primacy of the social whole. Since all individuals are also members of a larger unified social realm, "Self-surrender is therefore at times sternly enjoined, and if the egoistic desires are brought into conflict with social duties, the individual life and joy within us, at whatever cost of personal suffering, must be sacrificed to the just claims of our fellows."[23] Dowden claims the authority not only of science but also of George Eliot for this stern moral warning: "And what in effect is this statement, justified by science, of the nature of duty, but a rendering into abstract formulae of the throbbings of the heart which lives at the centre of such creations as *Romola, Armgart* and *Middlemarch*?"[24]

Dowden correctly identifies the moral issues raised by organicism that frame George Eliot's novels, but not their resolution. The question of whether self-surrender should be "sternly enjoined" is one that remains open in her work; it is not simply resolved theoretically. The poem "Armgart," to which Dowden refers, supplies a clear illustration of this point. Narrative endorsement of the ethics of submission is ambiguous. Armgart, an incomparable singer, experiences, in overcoming her egoism, a "birth from that monstrous Self."[25] The price of such a birth, however, is the loss of her one truly creative and distinctive talent, her voice. The narrative may appear to preach self-surrender and the abandonment of egoistic desire, but such sacrifice does not bring glorious integration within a unified social whole, but rather Armgart's

sorrowful understanding of her membership in the "race oppressed."[26] The conclusion of the poem is dominated less by a sense of moral transcendence than by a feeling of loss and regret. Throughout George Eliot's work one can find the same ambivalence toward the ethics of self-surrender and social duty. Though the central moral issues explored in her novels are drawn from contemporary theories of organicism, narrative developments in each work in fact expose the contradictions the organic social metaphor conceals while appearing to offer a perfect reconciliation between ideas of individualism and social duty.

In social theory the organic metaphor clearly functioned as a screen which selectively filtered perceptions, focusing attention on specific issues and suppressing others.[27] Inconsistencies inevitably occurred, however, precisely in regard to issues which the metaphor was designed to resolve: the relationship of part to whole, or individual to society. The same tension between individualism and holism that occurs throughout George Eliot's works is also to be found in the work of the social theorists who influenced her. Comte, for instance, vacillated between organicist conceptions, and more individualistic premises. In initially defining his physiological and social theories, he discarded simultaneously the associationist view of the organism and of society. The organism was not, he argued, an association of independently formed parts but rather a dynamic process in which each part was defined by its membership in the whole. The social implications of this theory are manifest in his declaration that "it is necessary to strip away the last metaphysical illusions, and show what is the true human point of view, – that it is not individual but social; . . . Man is a mere abstraction, and there is nothing real but Humanity, regarded intellectually or, yet more, morally."[28] Man cannot be considered apart from his membership in the social organism. Individualist philosophy, Comte believes, is based on an illusion; the concept of the individual as an autonomous entity must be discarded. Comte's social and physiological theory are clearly in accordance here, yet at times, in order to further a social argument, he does return to an associationist model. Thus at one point he states that, "All notions of public good must be based upon those of private advantage, because the former can be nothing else than that which is common to all cases of the latter."[29] The argument is based on an associationist theory of the organism in which the whole simply equals the sum of its parts.

The internal contradictions within Comte's social thought are similar to conflicts which emerge in the work of two other figures who influenced

George Eliot: John Stuart Mill and Herbert Spencer. Mill, who was initially strongly influenced by Comte, accepts, in his *System of Logic*, the latter's theories of the historical development of the social organism and the physiological principle of consensus expressed by the idea that "there is no social phenomenon which is not more or less influenced by every other part of the condition of the same society."[30] Mill's primary orientation, however, like that of the Revolutionary theorist Condorcet, from whom he draws an epigraph, is individualistic. He is not prepared to accept fully all the social implications of the idea of consensus: that the social whole cannot be reduced to the sum of its parts. "Human beings in society," he argues, "have no properties but those which are derived from, and may be resolved into, the laws of the nature of individual man."[31] Mill wishes to avoid reifying society; he is torn between his desire to treat the individual as primary and his adherence to the organic model. Unlike Comte, his allegiance lies with an individualistic perspective. In his later more critical work, *Auguste Comte and Positivism*, he questions what he sees as the authoritarian implications of Comte's organic social model, and firmly rejects Comte's theories of government since "Liberty and spontaneity on the part of individuals form no part of the schema."[32] He dissents, as George Eliot's Maggie Tulliver was briefly to do, from what he terms the doctrines of Thomas à Kempis: that the individual should act only for the good of others, "and that we should endeavour to starve the whole of the desires which point to our personal satisfaction."[33] Mill's challenge is to the doctrine of complete self-surrender for the good of the social whole, which both Comte and Dowden believed could be demonstrated by science. George Eliot's novels reveal a similar, though less emphatic, disquiet with this doctrine. Maggie and Dorothea might ultimately wish to surrender desires for the self and to achieve full incorporation within the surrounding social organism, but George Eliot saves them from this fate. Maggie is sent to her death, and Dorothea is permitted to marry Will and move from the town of Middlemarch. Like Mill, George Eliot is unwilling to accept fully the social implications Comte draws from the organic metaphor. Within her novels she attempts to find some form of balance between her belief in the individual's right to self-fulfilment and her firm commitment to the idea of social duty.

The most extreme individualistic interpretation of the organic metaphor occurs in the work of Herbert Spencer, George Eliot's close friend and intellectual asociate of the early 1850s, and the theorist most clearly responsible for popularising ideas of the social organism in England.

Throughout his work he was concerned to combat ahistorical notions of an invariable human nature, and to demonstrate scientifically not only that "the analogy between a society and a living creature is borne out to a degree quite unsuspected by those who commonly draw it, but also, that the same definition of life applies to both."[34] Though Spencer shared with Comte and Mill the belief that physiological laws of growth and interdependence govern the development of the social organism, his moral and political theories were actually founded on the principles of individualism and *laissez-faire* economics. Like the philosophers of the eighteenth century, his primary concern lay not with duties but with rights. Thus duty is defined in *Social Statics* as the fulfilment of one's own desires. Spencer's "First Principle" is that, "Every man has freedom to do all that he wills, provided he infringes not the equal freedom of any other man."[35] He wishes to demonstrate the "ultimate identity of personal interests and social interests;"[36] that is, how pursuit of self-interest could create social harmony, and not, as Comte and Fichte believed, how the personal must be subsumed within the social. If Spencer's theory is looked at closely, one can see that though his concept of history is drawn from organicism, his theory of social interaction is based on a chemical or mechanical model. Thus in *Social Statics* he argues: "To understand humanity in its combinations, it is necessary to analyze that humanity in its elementary form – for the explanation of the compound, to refer back to the simple."[37] Understanding of society is to be drawn from that of the individual; society is conceived as an aggregate of discrete units in which the whole equals the sum of its parts. Spencer's individualism, his support of the idea of rights, is founded on a theory of mechanical association.

As the preceding discussion suggests, there was no agreement amongst George Eliot's contemporaries as to social interpretation of the organic model. Each theorist experienced internal contradictions within his work and each turned to a different biological theory to sustain his social philosophy. While Comte employed a dynamic theory of organic formation to undercut notions of individual autonomy, individualists like Mill and Spencer turned to a mechanical theory of association in order to preserve their notion of individual freedom. Their disagreements, however, define the crucial issues of George Eliot's novels. In each work she explores the moral question of whether individualistic desire can ever accord with social duty, and the wider philosophical issue of individual autonomy. The primary debate amongst Comte, Mill, and Spencer concerned the issue of individual development: to what extent