

CHAPTER 10

On architects, bees, and 'species being'

When, sometime in the early eighteenth century, Bernard Le Bovier Fontenelle wrote his *Conversations on the Plurality of Worlds*, he devised a novel way in which to try to persuade a sceptical audience of the possible truth of the Newtonian world view. The conversations, with an elegant and discerning lady, took place in the course of evening walks in a garden. In such a setting, it seemed possible to contemplate alternative possibilities away from the hurly-burly of daily life and gain thereby a different perspective on the world.

It is hard, in contemporary circumstances, to think of ways in which to conduct a similar conversation. Yet this is what we must do if we are to uncover possible alternatives to the social world we currently inhabit. In the absence of any obvious blueprint for social change (a blueprint which would in any case likely be dismissed as visionary nonsense), and in the absence (regrettable as it may be) of any major social movement or vigorous class alliance pressing forward immediate theses and plans for social change, the best that I can offer is a series of talking points around which conversations about alternatives and possibilities might coalesce.

This means, if the arguments of Part 3 are correct, coming to terms with something called 'dialectical utopianism.' Dialectics here denotes something different from that usually understood from studies of Hegel or even of Marx. It presumes, for example, a dialectics able to address spatio-temporal dynamics openly and directly and able also to represent the multiple intersecting material processes that so tightly imprison us in the fine-spun web of contemporary socio-ecological life. It then entails a willingness, if only in the world of thought, to transcend or overturn the socio-ecological forms imposed by uncontrolled capital accumulation, class privileges, and gross inequalities of political-economic power. In this way, a space for thought experiments about alternative possible worlds can be constructed. While there is always a danger that this might degenerate into the production of unrealizable dreams, getting the historical and

geographical materialism right should help convert those dreams into prospects that really do matter.

I On architects and bees

I begin with the figure of the architect. I do so in part because that figure (and it is the *figure* rather than the professional person of whom I speak) has a certain centrality and positionality in all discussions of the processes of constructing and organizing spaces. The architect has been most deeply enmeshed throughout history in the production and pursuit of utopian ideals (particularly though not solely those of spatial form). The architect shapes spaces so as to give them social utility as well as human and aesthetic/symbolic meanings. The architect shapes and preserves long-term social memories and strives to give material form to the longings and desires of individuals and collectivities. The architect struggles to open spaces for new possibilities, for future forms of social life. For all of these reasons, as Karatani (1995, XXXV) points out, the 'will to architecture' understood as 'the will to create' is 'the foundation of Western thought.' Plato held to that view and Leibniz even went so far as to say: 'God as architect fully satisfies God as lawgiver.'

But the other reason I insist on the *figure* of the architect is because there is a sense in which we can all equally well see ourselves as architects of a sort. To construe ourselves as 'architects of our own fates and fortunes' is to adopt the figure of the architect as a metaphor for our own agency as we go about our daily practices and through them effectively preserve, construct, and re-construct our life-world. This reconnects directly to Marx. For it is hard to find a better statement of the foundational principles of the dynamics and dialectics of socio-ecological change than those laid out in the first volume of *Capital* (1967 edition, 177-8):

Labour is, in the first place, a process in which both man and Nature participate, and in which man of his own accord starts, regulates, and controls the material re-actions between himself and Nature ... By thus acting on the external world and changing it, he at the same time changes his own nature. He develops his slumbering powers and compels them to act in obedience to his sway ... We presuppose labour in a form that stamps it as exclusively human. A spider conducts operations that resemble those of a weaver and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. At the end of every labour process we get a result that existed in the imagination of the labourer at its commencement. He not only effects a change of form in the material on which he works, but he also realizes a purpose ...

The parallel with Park's conception of urbanization (see Chapter 8) is uncanny. More important for the present argument is that Marx's analogy can easily be reversed: while the activities of the architect help us understand the labor process in general, everyone who engages in any kind of labor process whatsoever is like the architect rather than like the bee.

Marx's evocation of bees has, however, a double reckoning. Not only does it relate directly to the sophistication of their architectural practices (so fascinating to naturalists), but Marx is undoubtedly also referring to Mandeville's famous tract of 1714 on *The Fable of the Bees* (with its subtitle of 'private vices and public virtues'). Mandeville not only commented therein on how public prosperity and virtue necessarily rested on private vanity, envy, vice, and waste (a problem that Adam Smith's utopianism of the market was later designed to redress) but took the even more invidious though 'honest' position (Marx 1976 edition, 764-5) that society in general could prosper only if the workers remained poor, ignorant, and deprived of any and all knowledge that might multiply their desires. Marx's concept of human labor in general is obviously meant to contrast with this idea of the ignoble and degraded status of a 'worker bee' under capitalism. The latter obviously has little or no chance to awaken those 'slumbering powers' latent within us to change the world and change ourselves.

We now know a lot more about bees. They are, for example, very communicative creatures. The dance choreography they perform in the hive provides precise information as to where food sources can be found. The intricacy and complexity of the communication system (and the accuracy and precision incorporated in it) demonstrates a truly amazing capacity for bees to encode and communicate information in an abstract, symbolic way that would put to shame many a communications or GIS specialist let alone any architect (Von Frisch, 1965, took forty years to map the dances). The code to the dance patterns was broken, almost by accident, by a mathematician who happened to be the daughter of a bee researcher. She recognized the patterns when projecting the properties of a six-dimensional flag manifold - a rare and obscure kind of mathematics - onto a two-dimensional space (Frank, 1997). The entire repertoire of bee dances with all of its innumerable parts and variations falls within a mathematical schema unknown to any architect. The only other known physical process to which such a mathematics applies concerns the quarks of quantum theory. This raises the speculative possibility that 'the bees are somehow sensitive to what's going on in the quantum world of quarks, that quantum mechanics is as important to their perception of the world as sight, sound, and smell' (86). If this turns out to be true, then not only do bees 'know' (with a tiny brain) a kind of mathematics known to only a

handful of people, but they also may be able to do what no human appears ever able to do — operate in quantum fields without disturbing them. So, even as we enter the age of quantum computing with all of its untold power, we still cannot do what bees seem able to do.

The more we know about bees, the more the comparison with even the best of human labor (let alone the worst of architects) appears less and less complementary to our supposedly superior powers. This seriously dents any idea that humans are somehow at the 'summit' of living things in all or even most respects. But it also sharpens interest in the question of what our 'exclusive' species capacities and 'slumbering powers' might be.

2 Human capacities and powers

Many species, like bees, possess 'basic senses entirely outside the human repertory.' From this, Wilson (1998, 47–8) formulates 'an informal rule of biological evolution important to the understanding of the human condition: If an organic sensor can be imagined that picks up any signal from the environment, there exists a species somewhere that possesses it.' It is not surprising, therefore, that the unaided human senses we possess 'seem remarkably deficient relative to the bountiful powers of life expressed in such diversity.' Wilson's characteristically reductive answer to why this is so runs as follows:

Biological capacity evolves until it maximizes the fitness of organisms for the niches they fill, and not a squiggle more. Every species, every kind of butterfly, bat, fish and primate, including *Homo sapiens*, occupies a distinctive niche. It follows that each species lives in its own sensory world.

When, therefore, we appeal as we did in Chapter 6 to the idea of 'the body as the measure of all things' we immediately encounter the limitations of our own sensory world. But human beings have acquired means to 'listen, see and hear' far beyond such limitations. Our capacities as 'cyborgs and scientists' cannot be ignored. This poses a fundamental problem for both Marx and Wilson (unlikely allies both) in their search for some sort of unity of knowledge. Wilson's version of it is this:

Natural selection [cannot] anticipate future needs ... If the principle is universally true, how did natural selection prepare the mind for civilization before civilization existed? That is the great mystery of human evolution: how to account for calculus and Mozart. (48)

This is a familiar problem in Marx. In innumerable passages, from the *Communist Manifesto* on, he appears to contradict the conception of the

labor process laid out in *Capital* and insist that our ideas, conceptions, views (in one word, our 'consciousness') change with every change in material conditions of existence and that the material form of a mode of production gives rise to institutional, legal, and political structures which imprison our thoughts and possibilities in particular ways. In perhaps the most famous rendition of this, [Marx argues 'it is not the consciousness of men that determines their being but, on the contrary, their social being that determines their consciousness'] (Marx and Engels, 1972 edition, 4). How, then, can the human imagination, made so much of in *Capital*, range freely enough outside of the existing material and institutional conditions (e.g. those set by capitalism) to even conceptualize what the socialist alternative might look like? In exactly the same way that Wilson has a problem accounting for the explosion of cultural and scientific forms in recent history, so Marx's historical materialism has a problem in preparing our imaginations (let alone our political practices) for the creation of a socialist (or for that matter any other) alternative.]

[While this may explain how we can be 'such puppets of the institutional and imaginative worlds we inhabit' (to repeat Unger's trenchant phrase) it also presents a difficult paradox. The historical-geographical experience of revolutionary movements in power (and of materialized utopianism of any sort) indicates the deep seriousness of the problem of unpreparedness for radical change. Many revolutionary movements did not or could not free themselves from ways of thinking embedded in the material circumstances of their past. The dilemma is as pertinent and real in political practices as it is salient theoretically. Unger's thought perpetually gravitates back to this central problem. It is a fundamental dilemma that any grounded form of dialectical utopianism must confront.]

Marx (1970 edition, 20–1) does, however, soften the theoretical paradox somewhat:

At a certain stage of their development, the material forces of production come in conflict with the existing relations of production ... From forms of development of the forces of production these relations turn into their fetters. Then begins an epoch of social revolution. With the change of the economic foundation the entire immense superstructure is more or less rapidly transformed. In considering such transformations a distinction should always be made between the material transformation of the economic conditions of production which can be determined with the precision of natural science, and the legal, political, religious, aesthetic or philosophic — in short ideological forms in which men become conscious of this conflict and fight it out.

The latter (the ideological forms) do not here appear to be as strictly

determined by material conditions as initially proposed (in part because of their inherent fuzziness) while the very existence of contradictions (particularly between the forces and relations of production) holds out the possibility for creative maneuver and open decision-making.

Nevertheless we often seem to oscillate in our understandings of ourselves and in our ways of thinking between an unreal fantasy of infinite choice (Unger's 'alternatives that scarcely seem to matter') and a cold reality of no alternative to the business as usual dictated by our material and intellectual circumstances.

This is why the figure of the architect is so instructive. Consider it further. It takes a huge exercise of the imagination to design an office tower, a residence, a factory, a leisure park, a city, or whatever. The architect has to imagine spaces, orderings, materials, aesthetic effects, relations to environments, and deal at the same time with the more mundane issues of plumbing, heating, electric cables, lighting, and the like. The architect is not a totally free agent in this. Not only do the quantities and qualities of available materials and the nature of sites constrain choices but educational traditions and learned practices channel thought. Regulations, costs, rates of return, clients' preferences, all have to be considered to the point where it often seems that the developers, the financiers, the accountants, the builders, and the state apparatus have more to say about the final shape of things than the architect. The process of 'doing architecture' entails all these complications. 'Doing architecture' is an embedded, spatiotemporal practice. But there is, nevertheless, always a moment when the free play of the imagination — the will to create — must enter.

The inner connection at work within Marx's oppositional statements then becomes more understandable. All capitalist ventures, including those of the architect, are speculative. This is what it means to throw money into circulation as capital and hope to realize a profit. All capitalist ventures must exist in the imagination before they are realized in the market (hence the acknowledged power of human expectations in economic action). The incredible power of capitalism as a social system lies in its capacity to mobilize the multiple imaginaries of entrepreneurs, financiers, developers, artists, architects, and even state planners and bureaucrats (and a whole host of others including, of course, the ordinary laborer) to engage in material activities that keep the system reproducing itself, albeit on an expanding scale. The discipline — such as it is — imposed by the system comes through the acid test of profitability. It is only then that the imaginary realizes itself in ways that gain positive reinforcement. But there are as many ways to make a profit as to skin a proverbial cat. So while the singular goal of profit may guide capitalist activity, there is no single path to reach that goal. Indeed, the whole history of the capitalist imaginary has

been to find all sorts of innovative and often quirky ways to realize that singular objective. Giving free rein to the imagination is fundamental to the perpetuation of capitalism and it is within this space that an alternative socialist imaginary can grow (though not now in a manner that is dis-embedded from capitalism and its dominant ways of thinking and doing).

What we then recognize is a simple material fact about the way our world, the world of capitalist culture, economy, politics, and consciousness, works. It is full of an incredible variety of imagined schemes (political, economic, institutional), many of which get constructed. Some schemes fail. Others are wildly successful. Some work for a time and then fall apart. It is the cold logic of the market place (often lubricated by a hefty dose of political favoritism and conniving collusions) that fixes the success or failure of the outcome. But it is engagement with future possibilities that starts the whole affair. Zola captured this idea beautifully in his expose of the power of money to transform the world through speculation. Says Saccard, Zola's anti-hero in his novel *Money*:

[Y]ou will behold a complete resurrection over all those depopulated plains, those deserted passes, which our railways will traverse — yes! fields will be cleared, roads and canals built, new cities will spring from the soil, life will return as it returns to a sick body, when we stimulate the system by injecting new blood into exhausted veins. Yes! money will work these miracles. . . . You must understand that speculation, gambling, is the central mechanism, the heart itself, of a vast affair like ours. Yes, it attracts blood, takes it from every source in little streamlets, collects it, sends it back in rivers in all directions, and establishes an enormous circulation of money, which is the very life of great enterprises. . . . Speculation — why, it is the one inducement that we have to live; it is the eternal desire that compels us to live and struggle. Without speculation, my dear friend, there would be no business of any kind. . . . It is the same as in love. In love as in speculation there is much filth; in love also, people think only of their own gratification; yet without love there would be no life, and the world would come to an end.

(Zola, 1891, 140)

Saccard's vision, his love of life, seduces all around him. Even his cautious and demure companion — Mme Caroline — is struck by how the present state of the land in the Levant fails to match up with human desires and potentialities:

And her love of life, her ever-buoyant hopefulness, filled her with enthusiasm at the idea of the all-powerful magic wand with which science and speculation could strike this old sleeping soil and suddenly reawaken it. . . . And it was just this that she saw rising again — the forward, irresistible march, the social impulse towards the greatest possible sum of happiness, the need of action, of going ahead, without knowing exactly whither. . . . and

amid it all there was the globe turned upside down by the ant-swarm rebuilding its abode, its work never ending, fresh sources of enjoyment ever being discovered, man's power increasing ten-fold, the earth belonging to him more and more every day. Money, aiding science, yielded progress. (75)

While the outcome suggests there is no alternative, the starting point holds that there are at least a million and one alternatives as we seek to probe future possibilities with all the passion and imagination at our command. The dialectic of the imaginary and its material realization (mediated in most instances through production) locates the two sides of how capitalism replicates and changes itself, how it can be such a revolutionary mode of production. Capitalism is nothing more than a gigantic speculative system, powered, as Keynes for one clearly recognized, by some mix of 'expectations' (respectable) and 'speculative behaviour' (disreputable). If such fictitious and imaginary elements surround us at every turn, then the possibility also exists of 'growing' imaginary alternatives within its midst.

Marx did not object to the utopian socialists because they believed that ideas could be a material force in historical change but because of the way they derived and promoted their ideas. Plucked from some rarefied ether of the imagination, such ideas were doomed to failure. Extracted from the womb of bourgeois society, or, as Zola might put it, from the 'fertile dungheap' of its contradictions, ideas could provide the basis for a transformative politics. The working class 'have no ideal to realise,' Marx (Marx and Engels 1972 edition, 558) wrote in his commentary on *The Civil War in France*, 'but to set free the elements of the new society with which old collapsing bourgeois society itself is pregnant.' It is the task of dialectical and intellectual enquiry to uncover real possibilities and alternatives. This is where a dialectical utopianism must begin.

3 The conception of 'our species being'

To speak of our capacities to transform the world through labor and thereby to transform ourselves, and to speak also of how we might deploy our albeit constrained imaginations in such a project, is to presuppose some way of understanding ourselves as a species, our specific capacities and powers (including the 'slumbering powers' of which Marx speaks) in relation to the world we inhabit. The dialectical and metabolic relation we have to nature and through that back to a distinctively human nature (with its special qualities and meanings) must therefore lie at the basis of what we, as architects of our futures and our fates, can and want to accomplish. Serious problems have arisen in social theory as well as in the quest for alternatives whenever a biological basis — such as that invoked in a concept

like 'species being' — has been invoked (familiar examples include the way the arguments of social Darwinism were incorporated into Nazism, organicist theories of the state, the dismal history of the eugenics movement particularly as applied to racial categories, and the profound social antagonisms generated in the debate over sociobiology during the 1970s). Much of the writing in this genre has indeed been reactionary, conservative, and fatalistic with a strong dash of biological determinism (these days usually genetic) thrown in. The general response on the social science side and throughout much of the left in recent times has been to retreat from any examination of the biological/physical basis of human behavior. Within Marxism, for example, the trend has been to treat human nature as relative to the mode of production (or to material life in general) and to deny any universal qualities to our species being.

This is not, as Geras (1983) expertly argues, an adequate response (nor is it at all consistent with Marx's formulations). Unless we confront the idea, however dangerous, of our human nature and species being and get some understanding of them, we cannot know what it is we might be alienated from or what emancipation might mean. Nor can we determine which of our 'slumbering powers' must be awakened to achieve emancipatory goals. A working definition of human nature, however tentative and insecure, is a necessary step in the search for real as opposed to fantastic alternatives. A conversation about our 'species being' is desperately called for.

I propose a basic conception that goes roughly like this. We are a species on earth like any other, endowed, like any other, with specific capacities and powers that are put to use to modify environments in ways that are conducive to our own sustenance and reproduction. In this we are no different from all other species (like termites, bees, and beavers) that modify their environments while adapting further to the environments they themselves help construct.

This conception defines 'the nature imposed condition of our existence.' We are sensory beings in a metabolic relation to the world around us. We modify that world and in so doing change ourselves through our activities and labors. Like all other species, we have some species-specific capacities and powers, arguably the most important of which are our ability to alter and adapt our forms of social organization (to create, for example, divisions of labor, class structures, and institutions), to build a long historical memory through language, to accumulate knowledge and understandings that are collectively available to us as guides to future action, to reflect on what we have done and do in ways that permit learning from experience (not only our own but also that of others), and, by virtue of our particular dexterities, to build all kinds of adjuncts (e.g.

ls, technologies, organizational forms, and communications systems) to dance our capacities to see, hear, and feel way beyond the physiological limitations given by our own bodily constitution. The effect is to make the red and scale of adaptation to and transformation of our species being 1 of our species environment highly sensitive to the pace and direction cultural, technological, economic, social, and political changes. It is, of course, that makes so much (though not all) of what we think and subservient to the inherent dynamics of a dominant mode of production. The argument for seeing human nature in relative terms, as some- ing in the course of construction, is not without weight and foundation. It also points to a connection between the concept of 'species being' 1 'species potential'.

We can never get away from the universal character of our existence as sory and natural beings, the product of a biological and historical- graphical evolutionary process that has left its mark upon our species h in terms of genetic endowments and rapidly accumulating cultural uitions. The sociobiologists are right to insist upon the significance our genetic heritage. No conception of human nature can ignore what den genetics and microbiology are revealing about human constraints, acities, and powers. The collapse of the Cartesian dualism of mind sus matter through contemporary studies of the mind/brain problem likewise leading the way to a radical reformulation of the relation ween thought and action in human behaviors.

sociobiology provides no adequate explanation of cultural and social lution, especially that of recent times. While it is plausible to argue for e kind of co-evolution between biological characteristics and cultural ms over the long term, the explosion of cultural/technical/linguistic nderstandings and practices particularly over the last 300 years has vided no time for biological adaptation. It has, furthermore, no pos- e causative or reductive explanation in terms of physical or biological cesses alone. The latter may form the necessary foundations for socio- logical change but they cannot provide sufficient explanations for the of civilizations (let alone for calculus and Mozart). In effect, the ation we have to confront is one in which genetic endowments have n put to use in entirely new-cultural ways. But what are these endow- nts that provide the raw materials out of which we are fashioning our orical geography?

We are, at root, curious and transformative beings endowed with vivid ginations and a certain repertoire of possibilities that we have learned ut together in different ways at different places and times. We are tical and semiotic animals with respect to each other, and politics is unded in communicative abilities that are themselves evolving rapidly.

Among our more endearing habits, furthermore, is the ability to be sophisticated rule makers and compulsive rule breakers. Indeed, a case can be made (and here I parallel the general thrust of Unger's work) that emancipation is best defined by a condition in which we can be both rule makers and rule breakers with reasonable impunity (for this reason Unger considers what he calls 'immunity rights' to be a fundamental feature of any society that aspires to emancipatory forms of development). But the rule making has to acknowledge a bundle of constraints and possibilities derived from our distinctive and achieved metabolic condition.

The basic repertoire derived from evolutionary experience provides strategic options for human action. The repertoire includes:

1. competition and the struggle for existence (the production of *hierarchy* and *homogeneity* through natural or, in human history, economic, political, and cultural selection);
2. adaptation and diversification into environmental niches (the production of *diversity* through proliferation and innovation in economic, political, or cultural terms);
3. collaboration, cooperation, and mutual aid (the production of *social organization*, institutional arrangements, and consensual political-discursive forms, all of which rest upon capacities to communicate and translate);
4. environmental transformations (the transformation and modification of 'nature' into, in our case, a *humanised nature* broadly in accord — though with frequent unintended consequences — with human requirements);
5. spatial orderings (mobilities and migrations coupled with the *production of spaces* for distinctive purposes such as escape, defense, organizational consolidation, transport, and communication, and the organization of the spatially articulated material support system for the life of individuals, collectivities, and the species); and
6. temporal orderings (the setting up of biological, social, and cultural 'clocks' that contribute to survival coupled with the use of various time orderings for biological and social purposes — in human societies time orderings vary from the almost instantaneous transmission of computerized orders to the long-term contracts that evolve by culture into moral precepts, tradition, and law).

These six elements form a basic repertoire of capacities and powers handed down to us out of our evolutionary experience. When faced with a difficulty we have choices. Put crudely, we can stand and fight, defuse the difficulty by diversifying into something non-competitive, cooperate, change the environmental conditions that give rise to the problem, move

out of the way, or put ourselves on a different time horizon (e.g. delay and defer into the future).

While all organisms may possess some or even all of the repertoire in some degree, there is no question that human beings have highlighted each element in particular ways (e.g. the long-term temporal relations of culturally transmitted traditions) and achieved rich and flexible ways of combining the different elements into complex social systems. Each mode of production can be construed as a special combinatorial mix of elements drawn from this basic repertoire.

But it is vital to interpret the categories relationally rather than as mutually exclusive (see Harvey, 1996, for a fuller statement). I think sociobiologists are correct, for example, to argue that cooperation ('reciprocal altruism' is their preferred term) is in some sense an adaptive form of competition (organisms that help each other survive better). The difficulty arises when they make the competitive moment the foundation of everything else (a convenient way to make capitalist competition appear as *the* fundamental law of nature). From a relational standpoint, competition can just as easily be seen as a form of cooperation. The production of territoriality is an interesting case in point. By defining territories competitively, organisms cooperatively organize the partition of resources to save on ruinous and destructive competition. Properly organized, territoriality is as much about collaboration in human affairs as it is about competition and exclusion.

The character of a social formation is defined by exactly how the elements in the overall repertoire get elaborated upon and combined through the exigencies of class power. Capitalism, for example, is often construed as being basically about competition. Survival of the fittest (measured in terms of profitability) is the Darwinian mechanism that creates order out of the chaos of speculative and competitive economic activity. But capitalism is also highly adaptive, constantly searching out innovative strategies, new market niches, and new product lines precisely to avoid competition in already established fields. Furthermore, capitalism could not survive without a lot of cooperation, collaboration, and mutual aid. I speak here not only of the ways in which supposed competitors so frequently collude (clandestinely or overtly) or of the extensive arenas of social organization (such as air traffic control) that rely upon tight submission of any competitive instincts to organized social control, but also of the extensive regulatory mechanisms embedded primarily in state power and the law to ensure that markets function as a consensual and collaborative framework for competition. The transformation or 'production' of nature through collaborative efforts (in, say, the fields of plant and animal breeding, and now genetic engineering, the construction of

physical infrastructures, the building of cities, and the like) generates rapidly evolving environments (both social and physical) within which different forms of competitive, adaptive, or collaborative behavior can arise. Uneven geographical developments shape entirely new market niches, for example. And, as I have often emphasized, capitalism has found remarkable ways to produce new spatial configurations, to measure and coordinate turnover times, and thereby construct entirely different spatiotemporalities to frame its own activities.

It is not, therefore, competition alone that defines capitalism, but the particular *mode* of competition as embedded in all the other evolutionary processes. Institutions, rules, and regulations struggle to ensure that only one sort of competition – that within relatively freely functioning markets respecting property rights and freedom of contract – will prevail. The normal causal ordering given in sociobiology can easily be reversed; it is only through the collaborative and cooperative structures of society (however coerced) that competition and the struggle for existence can be orchestrated to do its work (and it is notable how often capitalists complain of 'ruinous competition' and call immediately for government regulation to cure the problem). Without the extensive networks of collaboration and cooperation already in existence, most of us would be dead. Competition is always regulated and conditioned by cooperation, adaptation, environmental transformations, and through the production of space and time.

This illuminates how an alternative to capitalism might begin to be construed. The traditional way of thinking about socialism/communism, for example, is in terms of a total shift from, say, competition to cooperation, collaboration, and mutual aid. This is far too simplistic and restrictive. If capitalism cannot survive without deploying all of the repertoire in some way, then the task for socialism must be to find a different combination of *all* the elements from within the basic repertoire. This cannot be done by presuming that only one of the elements matters and that the others can be suppressed. Competition, for example, can never be eliminated. But it can be organized differently and with different ends and goals in view. The balance between competition and cooperation can be altered. This has frequently occurred in capitalist history as phases of 'excessive competition' alternate with phases of strong state regulation. The recent move towards globalization is an example of how a shift in one key element in the repertoire – the production of space – can occur in the struggle to sustain the system.

The history of socialist theory is full of debates on the feasibility of this or that form of social organization. Recent arguments have focussed on whether 'market socialism' is more achievable or desirable than democratically controlled central planning. The lively debate brought together by