

Chapter 2 of *Creative Evolution*: “The Divergent Directions of the Evolution of Life”  
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1. INTRODUCTION. B gives us an image of a shell bursting, and then its fragments bursting in turn. We see only the outer shell of the burst, but have to go back step by step [*remonter de degré en degré*] to the original blast.

This blast pattern is due to (1) the resistance life experiences from inert matter [*la résistance que la vie éprouve de la part de la matière brute*] and (2) the explosive force that life has w/in it, due to an « unstable balance of tendencies ».

The first issue touches on what we now call the “origin of life” problem. There are some fascinating theories here and B’s insight that “of phen in the simplest forms of life, it is hard to say whether they are still physical and chemical or whether they are already vital” is well put. This is the problem of “emergence.” But remembering B’s admonition that we have to train ourselves to think in terms of time, we should think about diachronic emergence (life from non-life as a process) rather than “ontological” emergence (life vs matter as two ontological realities). Now a diachronic process is not duration: it’s still a scientific treatment (time as an independent variable). But I’d say that even the “abstract” or spatialized time of diachronic analyses of processes is better than thinking ontologically regarding “origin of life” issues. (This is why I prefer the “mind in life” approach: you’ll never get anywhere with a “mind and matter” problematic, whereas we can do something with diachronic “origin of life” problem.)

The second issue is a key to B’s thought. He doesn’t specify the tendencies here, but he does insist on the diverging character of the movement. This is what Deleuze means by differentiation: the virtual (the *élan vital*) actualizes itself along divergent pathways (the lines of evolution: plant and animal at first, then others off of these two main outgrowths). The important thing is that these pathways did not pre-exist their actualizations. As Varela would say, it’s a matter of “laying down a path in walking.”

B gives us a forecast: to think life as “creative evolution” we’ll have to “unravel” [*démêler*: to “unmix” – cf. *mélange* as “mixture”] a number of divergences. Doing this means determining the nature of dissociated tendencies and estimating their proportions. If we then combine them, we’ll get an approximation or an imitation of the “indivisible motor principle” from which their *élan* arises. To recap: (1) we meet a mixture of tendencies in living things today; (2) we have to “unmix” this mixture and (3) determine the nature of the tendencies (how they differ in kind) and (4) estimate the proportions of their mixture. At that point we can (5) get an idea of the original push that results in the contemporary mixture. This is the process of “going back” [*remonter*].

2. MECHANISM AND FINALISM REVISITED. Adaptation is a necessary condition of evolution, but not sufficient. Having adaptation as the “directing cause” of evolution

is mechanism. There has to have been a push toward invention and creation, B says, otherwise life would have stayed put in the first ones of its originally successful and still surviving forms. Adaptation explains the twists and turns of evolution, but not its directions or its movement.

But finalism doesn't work either; life is not the realization of a pre-given plan. If it were, we'd have some idea where it's going, but we can't predict where life is going to go. Nor is it progressing toward harmony; in fact, the harmony is behind, in the original impulsion. What we see instead is that the forward movement of life means more divergence, not less: "*L'élan se divise de plus en plus en se communiquant.*" This divergence generates conflict between species, not harmony. We see lots of dead ends and retrogressions. There is a general overall progress to more complex forms on the great lines of evolution, but between the lines there are lots of dead ends.

B then gives us his critique of hylomorphism and teleology: realizing a plan closes off the future. Everything is given in advance, in the "project." But in life as creative evolution, the future is open because the impetus is behind. Thus we have a "prolific unity" [*unité féconde*].

B then distinguishes his evolutionary philosophy from scientific study: he's not interested in establishing the exact order of succession of species, only the great lines of divergence, and of these, he's most interested in the one that leads to man.

3. PLANTS AND ANIMALS. All manifestations of life include all the essential characters of most other manifestations, but in different proportions. Thus it's not the possession of characters, but the "tendency to emphasize them" that must be taken into account. B moves through a series of ever deeper differences: feeding; mobility; consciousness.

Thus we see vegetables create organic materials from minerals they draw directly from earth, air, and water and that animals take these from plants or other animals who have fed on plants. But that means animals must move. The connection of consciousness and movement is noteworthy, so we can say that animals have a tendency to movement and consciousness and plants to fixity and torpor. Thus we connect animal movement to conscious freedom and plants to unconscious determinism. But again these are tendencies, so in degenerated fixed parasites we see animals in whom consciousness is asleep.

Given the way in which plants can awaken and animals can fall out of the mobility-consciousness nexus, it's probable that early life "oscillated" between plant and animal forms, but these tendencies diverge in the course of evolution.

4. INDETERMINATION. Life works by accumulating potential energy from matter which is then stores up for future action which will be triggered at the right moment. Now the source of energy is the sun. So life's problem is how to store up for future use

solar energy which is ordinarily continuously dispersed as it hits the surface of the earth. (cf. Bataille and “expenditure” / *dépense*). Thus carbohydrates are like “explosives.” Now at the start the storage and the expenditure were probably linked, so early life forms need constant exposure to sunlight in order to move. But matter would resist having storage and expenditure developed very far in the same organism. Sooner or later they would have to diverge, with plants emphasizing storage and animals expenditure. And within plants there’s another divergence, with nitrogen fixing concentrated in micro-organisms, while carbohydrate production proceeded to differentiate itself in many large organisms.

B now sums up his reflections to date in a “law”: given that all life forms manifest to some extent the characteristics of life on other divergent lines, it seems that everything in the original tendency that is not incompatible with its direction will be preserved in the “special tendencies” that result. This explains the formation of identical complex mechanisms on independent lines. It also explains plant sexual generation as well as plant complexity. Both are essential to animals but luxuries to plants; this can only be accounted for by the original impetus.

5. MOTION AS THE ESSENCE OF ANIMALS. It seems as if the rest of the body exists to serve the nervous system (along with sensory organs and motor apparatus), furnishing them with the explosive energy they use in action. There’s a sort of internal service economy then, so that “a higher organism is essentially a sensori-motor system installed on systems of digestion, respiration, circulation, secretion, etc. whose function it is to repair, cleanse and protect it, to create an unvarying internal environment for it, and above all to pass its potential energy to convert into locomotive movement” (124).