

Vitalism and the Problem of Individuation: Another Look at Bergson's *Élan Vital*



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Abstract Mikhail Bakhtin's 1926 essay, "Contemporary Vitalism," includes Bergson alongside Driesch in a short list of "the most published representatives of vitalism in Western Europe," and, indeed, Bakhtin's critique of Driesch is intended to undermine what he calls the "conceptual framework" of "contemporary vitalism" as a whole (The crisis of modernism: Bergson and the vitalist controversy. Eds. Frederick Burwick and Paul Douglass. Cambridge University Press, New York, 1992, p 81). The conceptual framework that Driesch and Bergson are supposed to have shared in common consists at bottom, for Bakhtin, in the ontological commitment to the autonomy of life, "its independence, its disconnectedness from physical-chemical phenomena" (81). This has long been understood as the defining mark of vitalism, at least in the mind of its critics: the contention that matter and the mechanical models that track it are insufficient to the reality of biological forms, and that the explanation of life therefore requires the postulation of a non-mechanical, possibly immaterial, uniquely vital principle, force, substance, or property. Recent scholarship has made considerable headway in complicating these pictures by attending to earlier and subtler forms of materialism, and by distinguishing between different types of vitalism and drawing out the heuristic or scientific utility of some of them (Wolfe, *Eidos* 14: 212–235, 2011, *Antropol Exp* 17(13): 215–224, 2017; cf. Wolfe and Normandin, *Vitalism and the scientific image in post-enlightenment life science, 1800–2010*. Springer, Dordrecht, 2013). The focus of some of this work has been on the critical reevaluation of Driesch himself (Bognon et al., *Kairos J Philos Sci* 20(1): 113–140, 2018). Yet the status of Bergson's commitment to the existence of a vital principle remains underdeveloped. In the midst of what some are calling a "Bergson renaissance," I think that it calls for the same kind of critical reappraisal (Ansell-Pearson, *Bergson: thinking beyond the human condition*. Bloomsbury, New York, 2018: 1; cf. Lundy, *Deleuze's Bergsonism*. Edinburgh University Press, Edinburgh, p 5, 2018). The aim of this paper is to attempt the outline of an answer to that call. I begin with a brief summary of Driesch's vitalism, then I reconstruct Bergson's underappreciated critique of internal finality, or what

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Kant called inner purposiveness, and locate in it a subterranean criticism of vital principles of the Drieschian variety as well. Two consequences follow: first, if Bergson is to be considered a vitalist, it cannot be in the Drieschian sense and we are therefore wrong to associate the two; and second, if Bergson is to be considered a vitalist, then his vitalism has to be understood—somewhat counterintuitively, and certainly *contra Driesch*—on the basis of a principle external to the ostensible individuality of biological forms.

Hans Driesch is the primary target of Mikhail Bakhtin's 1926 essay "Contemporary Vitalism." But Bakhtin includes Bergson alongside Driesch in his short list of "the most published representatives of vitalism in Western Europe," and, indeed, Bakhtin's critique of Driesch is intended to undermine what he calls the "conceptual framework" of "contemporary vitalism" as a whole (1992: 81). The conceptual framework that Driesch and Bergson are supposed to have shared in common consists at bottom, for Bakhtin, in the ontological commitment to the autonomy of life, "its independence, its disconnectedness from physical-chemical phenomena" (81). Driesch locates the difference between this contemporary vitalism and its parent approaches not in the postulation of a special force whose action in the biological domain safeguards the irreducibility of life to mechanistic explanation, but in the fact that contemporary vitalists are concerned to justify that postulation with empirical data while the older vitalists "silently assumed [its] permissibility" (80). Contemporary vitalism is supposed to serve as a viable biological programme, capable not only of orienting research (as Bergson insisted [1977: 112, 115–116, 249]), but well-founded as a conclusion drawn from the evidence of existing biological research as well (as Driesch and Bergson both claimed). "For this reason," Bakhtin says, "we may term contemporary vitalism 'critical vitalism,' in contradistinction to the old vitalism" (1992: 80–81). Yet Bakhtin is clear that he thinks the critical aspirations of contemporary vitalism remain unrealizable, as vitalism is by its very nature a dogmatic position that cannot hope to justify itself with reference to empirical research (81). This is because in contending that biology is irreducible to physicochemical explanation, and that explanations of the specificity of life require something superadded to the material world, vitalism, "like any metaphysical theory," "uses subjective schemes beyond the scope of experimentation" (96).

This has long been understood as the defining mark of vitalism, at least in the mind of its critics: the contention that matter and the mechanical models that track it are insufficient to the reality of biological forms, and that the explanation of life therefore requires the postulation of a non-mechanical, possibly immaterial, uniquely vital principle, force, substance, or property. Every element of that contention is the artifact of a polemic: the vitalist is conceived as an anti-materialist by her critics, and the materialist is conceived as a necessary partisan of mechanism, usually reductionism as well, by her critics in turn. Recent scholarship has made considerable headway in complicating these pictures by attending to earlier and subtler forms of materialism, and by distinguishing between different types of vitalism and drawing out the heuristic or scientific utility of some of them (Wolfe 2011, 2017; cf. Wolfe and Normandin 2013). The focus of some of this work has

been on the critical reevaluation of Driesch himself (Bognon et al. 2018). Yet the status of Bergson's commitment to the existence of a vital principle remains underdeveloped. In the midst of what some are calling a "Bergson renaissance," I think that it calls for the same kind of critical reappraisal (Ansell-Pearson 2018: 1; cf. Lundy 2018: 5). The aim of this paper is to attempt the outline of an answer to that call.

I begin with a brief summary of Driesch's vitalism, though I intend it only as a preparation for Bergson's own response to Driesch and concede in advance that a more nuanced picture of the latter could and should be drawn. Then I reconstruct Bergson's underappreciated critique of internal finality, or what Kant called inner purposiveness, and locate in it a criticism of vital principles of the Drieschian variety as well. Two consequences follow: first, if Bergson is to be considered a vitalist, it cannot be in the Drieschian sense and we are therefore wrong to associate the two; and second, if Bergson is to be considered a vitalist, then his vitalism has to be understood—somewhat counterintuitively, and certainly *contra* Driesch—on the basis of a principle *external* to the ostensible individuality of biological forms.

The final sections of the paper deliver an account of what we might tentatively call Bergson's "external vitalism." The first step of this account consists in the *position* of Bergson's infamous *élan vital*, the vital impetus: that is, its externality to all constituted forms. The second step is a reconception of the *nature* of the *élan* on the basis of Bergson's own overlooked pragmatic minimalism regarding its ontological status. I insist upon two points: first, that the *élan vital* is not an actual force, property, substance, or principle, but a *tendency*—technically a "virtual" tendency—which means that when it is referred to as a principle, it is in abstraction from the concrete particularities in which it is embodied as a tendency to some degree of realization; and second, that understood in this way, the *élan* is an image drawn from the psychological register intended to best capture the nature of living systems. It is, in other words, *only an image for life*, though Bergson regards it as the best image we have available (1998: 257). I conclude by gesturing towards a discussion of some of the possible benefits of the Bergsonian account.

1 Driesch

Driesch's first major theoretical work in English, *The Science and Philosophy of Organism*, appeared in 1908 (but drew heavily from earlier works published in German). It offered a defense of vitalism on the novel basis of the experimental facts of regulation and regeneration. Driesch's idea was that only if undisturbed development was possible could everything about organisms be mechanistically explained (1929: 103). What he therefore set out to prove was that development could be interrupted without the individuality of the developing organism being compromised as a result. Cases of regulation and regeneration seemed to evince the point. Driesch argued that they could not be understood mechanistically, and that they testified as a result to the non-mechanical action of an immaterial force.

By compressing early sea urchin embryos between glass plates, Driesch was able to reconfigure the divisions in their eggs, reshuffling their nuclei so that some nuclei that would normally have produced dorsal structures were found in ventral cells instead. According to mechanistic (or preformationist) principles, the embryos should have developed in a disordered and unviable fashion. Yet Driesch famously obtained normal larvae from them, which meant for him that the early embryo was composed of pluripotent cells, and that the developmental processes through which they gave rise to differentiated organs must be self-regulating (cf. Sapp 2003: 100). Driesch linked the phenomenon of regulation to the already well-established facts of regeneration such as it occurred in his own experiments on salamanders, which are capable of regenerating the lenses of their eyes after they are removed.

Driesch argued that regulation and regeneration indicate the existence of an individualizing agency at work in the organism, distinguishing it from the mere mechanical assemblage of parts and securing its autonomy as an organized whole over and above changes in its constituent elements. Driesch's word for this agency was "entelechy," an Aristotelian term with its roots in the Greek *enteles* [complete], *telos* [end], and *echein* [to have]. Leibniz would later popularize the word with the definition of "something analogous to soul, whose nature consists in a certain eternal law of the same series of changes, a series which it traverses unhindered" (1989: 173). Driesch's entelechy is an immaterial force, acting to bring about the unified development of an organic individual from out of initially pluripotent cells. As a result of entelechy, "a sum (of possibilities of happening) is transformed into a unity (of real results of happening) without any spatial or material preformation of this unity" (Driesch 1929: 215).

Entelechy was what guided initially pluripotent cells to the specific structures in which their development culminated. Cellular pluripotency explained the fact that cells isolated at the two-cell stage of development in sea urchin eggs did not produce two half-embryos but two fully formed sea urchins. Entelechy explained the way those cells were guided towards their final forms, since their pluripotency seemed like evidence of the idea that no physical or chemical structures existed in order to determine development in advance. Driesch thought that cases of regeneration supported the existence of entelechy as well, since they demonstrate the way the individuality of the organism could be safeguarded against changes to its composition. Not only can living things self-regulate developmentally, but they can do so compositionally as well (153–154). The special force that brings about the individual whole from out of a pluripotent cellular field also secures the integrity of that whole once it is constituted. Regulation is regeneration for the adult organism. Driesch supposed both to be impossibilities for mechanical systems. He concluded that "embryological becoming is 'vitalistic' . . . it is impossible to comprehend it by the laws of physics and chemistry" (1914: 226). This is vitalism neatly stated: physics and chemistry are inadequate to the explanation of biological phenomena, and biology therefore requires the addition of a supplemental principle.

2 Bergson's Critique

As Driesch demonstrated, vitalisms typically consist in critical as well as constructive elements. Their criticisms target the scientific understanding of matter, usually mechanistically conceived, and argue that it is insufficient to the explanation of what is distinct about biological phenomena. Their constructive arguments advance varying positions regarding the new and irreducible principle, property, or force that has to be introduced in order to capture the specificity of life. Vitalism's critics purport to attack both, but it is only really a succession of variants of vitalism's constructive aspect that have been consistently discredited. Like many others, Bergson considers the critical moment worth taking seriously. Biology is for him irreducible to physicochemical explanation. In this respect Bergson is no doubt a vitalist, but this tells us little. The more interesting question is whether he advances his own constructive hypothesis as well, of the sort that would put him in line with Driesch.

Bergson does of course advance a positive theory of his own, but it is not one that puts him in line with vitalists of the traditional variety. Bergson is in fact an ardent critic of such theories. They share on his account an important deficiency with mechanism: both are human contributions and do not exist in nature independently. According to this criticism, Driesch's vital principle is an intellectual abstraction born of the projection of the manufacture model of organization onto the biological world. It understands organisms as if they were built artifacts and attempts to explain their composition on that basis. Here is Bergson (1998: 225):

When we think of the infinity of infinitesimal elements and of infinitesimal causes that concur in the genesis of a living being . . . the first impulse of the mind is to consider this army of little workers as watched over by a skilled foreman, the 'vital principle,' which is ever repairing faults, correcting effects of neglect or absentmindedness, putting things back in place.

This first impulse is natural to the intellect, a product of our adaptation to acting on matter. It consists in treating the organism as if it were an object, its organization as if it were designed, and concluding that there must be a principle to account for that design, just as artifacts are constructed and repaired by external agents. The mistake is in thinking that organisms are complex in the same way that made things are complex. The appearance of that complexity is only "the work of the understanding" (250). It is not a fact, but a projection, and so does not require a superadded principle that would act as a designer in order to explain it.

That is the first problem with any vitalism that accounts for organization through the postulation of an organizing principle: its anthropocentric artifactualism. The second—and more important—is its supposition that determinate individuality is a biological reality. Bergson delivers a somewhat sophisticated critique of this position, though it is ultimately in service of his rejection of the theory of internal finality or inner purposiveness. I suggest nevertheless that the argument against biological individuality can be redeployed in the context of Bergson's engagement with Driesch.

Bergson understands internal finalism, or the theory of inner purposiveness, to have arisen as a consequence of the empirical difficulties faced by the external finalism that he attributes to Leibniz. The Leibnizian doctrine is supposed to consist—on Bergson’s gloss—in the idea that “beings merely realize a programme previously arranged” (1998: 39).¹ On that account, the event of any actualization was preceded not only by its own specific possibility, but by a global set of possibilities together comprising the plan or programme on the basis of which it was realized. Bergson calls this externalist because it locates the goal, end, aim, or purpose orienting the actualization process external to any particular individual being actualized; it is attributed to world, not to the beings that populate it. There is more to say about this interpretation of Leibniz—as well as about the possibilism that it implies—but what is important for now is (1) the idea that doctrines of finalism have to locate ends, or purposes, *somewhere*; and (2) that external finalism consists in the location of purpose beyond or outside of the particular beings that realize it, in the whole instead of its parts.

Now, Bergson suggests that it is “the tendency of the doctrine of finality” to “thin out the Leibnizian finalism by breaking it into an infinite number of pieces” in response to the fact that “if the universe as a whole is the carrying out of a plan, this cannot be demonstrated empirically” (40). Indeed, “the facts would equally well testify to the contrary,” for nature taken as a whole would seem to evidence as much disorder as order, chaos as harmony, as much retrogression as progress (40). Though it seems unlikely that finality might be reasonably affirmed of the whole of life as such, “might it not yet be true, says the finalist, of each organism taken separately?” (40). By further individuating its object, finalism locates the empirical reality of disorder in the clash of organisms with each other in order to preserve purposiveness at the level of each individual organism taken with respect to itself. Bergson calls this “internal finality” since it attributes purposiveness to the internal composition of the organic body as an explanation for the division of labour among its parts and their integration in service of the end of the individual whole (41).

When Bergson declares this “the notion of finality which has long been classic,” I think he has Kant and Hegel in mind (41). It was Kant who first distinguished between external and internal purposiveness, the same terms that Bergson employs

¹This is something of a caricature of Leibniz’s defense of teleology (cf. Jorati 2017: 59–91). Leibniz serves to personify a certain position within Bergson’s critical programme; that position is the elaboration to its conceptual conclusion of the idea that actual entities are the realizations of possibilities that pre-exist them. To the extent that the reality of time requires, for Bergson, a concomitant epistemic unforeseeability, it follows that any defense of preexistent possibilities at all is as mistaken as the extreme form of the position that he attributes to Leibniz. Consider also Bergson’s methodology of tendency-analysis, according to which he extrapolates from a given tendency its fullest culmination and takes that to represent the core principle of the tendency itself (cf. 1998: 136).

in order to effectuate his own distinction in theories of biological finalism.² By external purposiveness, Kant meant the finality of artifactual manufacture, since the particular end served by the artifact lies outside of itself in its use; by internal purposiveness, on the other hand, he meant the particular kind of finality that qualifies living beings, for the ends served by the organization of their parts are *internal* to the wholes that they compose (2000: §82; 5: 425). The living being was to be conceived for Kant through itself, as self-organizing: it is, as a whole, the final cause of the efficient-causal relations among its parts, even as it is constituted by them recursively. And yet, the thought of purposive organization nevertheless required the thought of an external intention; this was the central antinomy of his “Critique of the Teleological Power of Judgment” (§70; 5: 387). Its resolution was to come by way of Kant’s account of regulative judgments. Teleology was not, then, to be predicated of the organism constitutively, as if it really was a made thing; teleology was rather to be ascribed to it only regulatively, as a necessary constraint on the intelligibility of the organism as organized matter. Hegel later famously undertook to push the concept of internal purposiveness beyond its Kantian heritage by unbinding it completely from the yoke of externality (cf. Kreines 2004). The decisive Hegelian definition of life was therefore to consist in large part in the non-oppositional reciprocity between organization and purpose in the individual being (1969: §216, §219; cf. Kreines 2008). It is Hegel, then, that best represents the internalist culmination of the second tenet of Leibnizian finalism (cf. Micheli 2008). And so by 1907 it would have made sense for Bergson to consider “classic” the formulation of finalism that restricted the attribution of purposiveness to the organism qua self-organizing individual.

Bergson’s contention that “finality is external or it is nothing at all” is therefore an audacious one; its foil might well be the entire history of the German Idealist philosophy of nature (1998: 41; cf. Wandschneider 2010: 71). I reconstruct the argument in four steps: discernment, criticism, and two inferences. Bergson begins by discerning in the theory of internal finality its dependence on a conception of the organism as a rigorously bounded individual. If its parts are to be subordinated to the organismal whole as the final cause of their organization, then there must be a determinate distinction between that whole and its outside; the whole must, in other words, have a definite shape. Purposiveness can only be internal with respect to a limit—a bounded individuality—that would differentiate that internality from what is external to it. The theory of inner purposiveness stands or falls with the individuality of the organism.

²Note that the organic body was, for Leibniz, to be understood as analogous to a human-made machine; the difference was that organisms were *infinitely* complex, while man-made machines eventually bottomed out into organized parts—which were, again, infinitely complex machines themselves (cf. Illetterati 2014: 89). Whereas the technical artifact was a product, for Leibniz, of human intelligence, the organic machine was to be understood as a product of the divine intellect instead (Smith 2011: 165–196). But both, on Kant’s gloss, are equally made things; and therefore the purposiveness of the organization of both reside outside of them, in their respective makers (2000: §65; 5: 374). A properly *natural* purposiveness therefore required, for Kant, the overcoming of the utility-based teleology still prominent in Leibniz’s externalism.

The second step to the argument is a criticism of this conception of the organism. It is motivated by two considerations: the relative autonomy of the parts, patterns, and processes that constitute the organism; and the continuity of the germ cells through their temporary instantiation in the soma. Bergson begins by noting that each of the elements of the organismal whole “may itself be an organism in certain cases,” that “the cells of which the tissues are made,” for instance, “have also a certain independence,” and that, in sum, there is to be attributed to the organism’s parts a relative autonomy from the whole (1998: 41–42). Thus, the same self-organizational powers that define the organism as a whole are characteristic too of the parts and processes that constitute it, as well as the subsystems whose interactions constitute them in turn. The unified individuality of the organism is perhaps better understood as the coordination of a set of self-organizing living systems that are each at the same time conceivable as unified biological individuals in their own right. It follows for Bergson that the inner purposiveness of the organism is in principle *external* to the inner purposiveness of each one of its parts when they are understood as self-organizing systems themselves. This is what Bergson means when he says that “the idea of a finality that is *always* internal is therefore a self-destructive notion” (1998: 41; cf. Ansell-Pearson 2002: 134).

Bergson prefers to put the point in terms of the impossibility for individuation, identity, or mereological closure to ever establish itself fully or finally in the organic domain. This formulation is represented in the second reason motivating Bergson’s argument against the internalist’s conception of the organism: given the facts of reproduction, organic individuation is always incomplete. Bergson makes passing reference here to the “Weismann barrier,” the theoretically inviolable division between germinal and somatic cells (1998: 42). On Weismann’s account, it is only germinal cells, or gametes, that have heritability functions: they pass information along their own line only (1893: 174). The somatic cells are an effect or product of the totipotent zygote, which is itself a product of the fusion of haploid gametes or germ cells. The germ cells are formed on the basis of a vital substance that Weismann called the germ-plasm, which remains continuous and unchanged through each iteration of this process (1893: 184). The causal line runs in one direction: the germ cells give rise both to themselves as well as to the somatic cells, while the somatic cells produce only cells that develop into the body of an organism (cf. Sabour and Schöler 2012: 716). This internal split rends the organic world in two, subtracting evolutionary significance from constituted organisms and relocating it in the pre-individual germ line that runs through them. This means that somatic mutations cannot be inherited; neither can habits, acquired characteristics, or associations. The germ line is deathless; individual organisms are its temporary excrescences, epiphenomenal byproducts deposited along the course of the germinal flow (cf. Bergson 1998: 26–27, 87). This is an extreme position, and has since been weakened and complicated by the epigenetic revolution in evolutionary theory (cf. Surani 2016: 136). Bergson thinks, in any case, that reproduction is on its own sufficient to furnish his conclusion that individuation is, in the organic domain, always necessarily unfinished (1998: 43, 27).

The implication is that if there is to be a vital principle, it cannot be indexed to individual organisms, because—if for no other reason—*organisms are never completely individual*. Germinally understood, reproduction undermines the closed individuality of the organism from behind by opening it onto its generating conditions. Since those conditions are developmentally continuous through it, the organism is less a thing of its own than a derivation from the material of its progenitors, a secondary effect. And the germ-plasm is, on Weismann's account, continuous not only through the processes of fertilization and development responsible for the formation of the adult organism, but through its entire phylogenetic lineage as well (184). This continuity must be what Bergson has in mind when he claims that in the attempt to locate and determine the principle of the beginning of an organism “gradually we shall be carried further and further back, up to the individual's remotest ancestors: we shall find him solidary with each of them, solidary with that little mass of protoplasmic jelly which is probably at the root of the genealogical tree of life” (1998: 43). If the organism is formed out of a combination of its parents' vital substances and determined by the unchanged germ-plasm continuous through them, then the same must go for each progenitor in turn. The parents on whose combined body the bud of the organism first sprouted are each themselves the flowers of budded parts of a combination of parental substances of their own. The process of their formation was determined and directed by germ-plasm that was continuous through them as well. This means that the principle of closure that would secure the determinacy of the organism as a distinct individual is deferred backwards through each of its generations, arriving finally at the last common ancestor shared by all extant forms of life, Bergson's “little mass of protoplasmic jelly” (43).

“Where, then,” he asks, “does the vital principle of the individual begin or end?” (43). The question is unanswerable, for “each individual may be said to remain united with the totality of living beings by invisible bonds” (43). It follows as a consequence of this invisible (germinal) unity that “the individual is not sufficiently independent, not sufficiently cut off from other things, for us to allow it a ‘vital principle’ of its own” (42). Any attempt to individuate the vital principle is therefore going to collapse back onto the entire history of evolution and encompass “the whole of life in a single indivisible embrace” (43). Here is the anti-internalist logic running through this rebuke against vitalism: the vital principle is, when individuated, a variant of internal finality. When Bergson claims that the individual is not sufficiently independent for us to allow it a vital principle of its own, he means too that the individual is not sufficiently independent for us to allow it a *final cause*, or inner purpose, of its own either.

The closure required for the bounded individuality of the organism is frustrated by its reproduction and development just as it is by the relative mereological autonomy of its parts. Unifying and motivating these considerations is the same implicit premise: that internalism stands or falls with the complete reality of organic individuation. From this it follows, first, that in the absence of the ability to fully specify a limit between one living being and another—to individuate them—there can be no determinate distinction according to which purposiveness can be rendered internal. Second, and finally, we can conclude that if finalism—and any associated vital

principle—is to be viably thought, it will have to be rendered *external* to any ostensibly individuated biological form. To say that finality is a necessarily external attribution is to say that it is to be attributed to all of life *indivisibly* (43). Internality requires that divisions be cut into the organic domain, and since they are always incompletely determinate, the locus of finality will always reside external to them, on the outer side of any individual so considered. At the limit, this externalism is a global phenomenon, qualifying the *whole* from out of which internalism attempts to dissociate its individual parts.

If by vitalism we understand the postulation of a specific *x* internal to the purposive organization of living things in order to explain their irreducible distinction from inorganic matter, then Bergson is no vitalist. There are no autonomous individuals in the organic domain. Yet Bergson does not conclude by rejecting the idea of a vital principle; he affirms instead that if it is to be attributed to the organic domain, then it has to be predicated of life as a whole.

3 External Finalism

This “external vitalism” is a variant of finalism because it still predicates purposiveness of life. It predicates it of the “whole” of life. It also inverts its position: purpose is not to be located at the end of a process of change, as the plan or program according to which the change is unfolded, but rather at its beginning, as the impetus or impulsion that sets off the process and provides it a kind of directional puissance without constraining its development in terms of a pre-existent end. There are three components to Bergson’s external vitalism: (1) a particular conception of the “whole” to which externalism attributes purposiveness; (2) an inversion of the location of that purposiveness within the whole (that is, not as its end, but as its originating push); and (3) a reformulation of what it is that accounts for the existence of that purposiveness in the first place (that is, an impetus, not a plan, program, organizational unity, or otherwise).

3.1 *The Whole*

What is the whole, for Bergson, if it is neither the sum total of all currently present individuals (actualism), nor the pre-existent plan on the basis of which they are actualized over the course of time (Leibnizian externalism or “possibilism”)? Here is what Bergson says (43):

If there is finality in the world of life, it includes the whole of life in a single indivisible embrace. This life common to all the living undoubtedly presents many gaps and incoherences, and again it is not so mathematically *one* that it cannot allow each being to become individualized to a certain degree. But it forms a single whole, none the less; and we have

to choose between the out-and-out negation of finality and the hypothesis which co-ordinates not only the parts of an organism with the organism itself, but also each living being with the collective whole of all others.

To ask after the whole is to ask after what it is that is common to all the living, uniting every living being with every other at every level of organization. Bergson's explicit answer comes late in *Creative Evolution*: that which "links individuals with individuals, species with species, and makes of the whole series of the living one single immense wave flowing over matter" is, he says, a "unity" of "the *élan*" "passing through generations" (250 tm). The unity of the *élan* is a "movement," "a simple process" (250–251). Partially individuated organisms are to be understood as moments of a movement that traverses them, phases of a process that is realizing itself across them. It is that movement, that process, that unites them (128). The whole of life is therefore not comprised of all living beings past and present, taken together as one total collection. The whole of life is rather to be understood as the event of their progressive generation over evolutionary history. The whole of life is the movement of evolution considered as a single unfinished event, driven by a unified impulse (cf. Montebello 2012).

Life as a whole is external to any one of the ostensibly individuated biological forms that populate it because individual forms are only ever artificially stable perspectives on what is an event in the process of unfolding itself (128). It is in fact not exactly correct to speak of the event and its unfolding as separate things. The event of life is the very process of its unfolding, its movement, and nothing besides. Any determinate form is by definition an artificial stabilization of it. Consider the flight of Zeno's arrow, one of Bergson's favourite images. If the localization of the arrow at any of the spatial locations through which it passes is an artificial operation, this is because those locations are spatializations or freeze-frames of a qualitatively whole movement, and have no reality outside of it. The arrow's trajectory is external to any one of its possible locations in space as those locations represent possible stopping points and are therefore derivative on the movement as such. The movement, for this reason, is not only external to its possible stopping points; it is also immanent to them, coextensive with them. The same should be said of life. It is the qualitative whole of the event of evolution. Determinate organic forms are only its possible stopping points, and it is therefore external to any possible set of them. At the same time, and as a result, it is also immanent to all of them, for they are nothing outside of the movement through which they are formed (43–44).

3.2 *Unity*

If it is their shared history of development within the event of evolution that unites the extant plurality of life forms—what contemporary theorists call the "deep homology" beneath constituted organisms—then evolution unfolds in contradistinction to the way artifacts are constructed. This is to say that in the domain of life,

unity resides prior to the differentiation of parts, or the proliferation of species. This model of life is at odds with what Bergson takes to be the Leibnizian finalism—or what we might better understand as preformationism—that understands the world to be harmonized in view of the ends that pre-exist and orient its trajectories of development, as if to integrate an initially disparate set of parts in view of a shared telos. Bergson's response is, again, not to deny purpose to the process, but rather to detach it from its telic location at the end, and relocate it at the beginning. Purpose—to put it this way—is a function not of final cause, but of efficient cause, of initial impulsion. For it is the latter that is shared in common across a plurality of different forms, it is the latter that unites them and provides a minimal directional constraint on their differentiation.

If there is unity in the domain of life—whether developmentally or evolutionarily determined—then it is to be located at the origin of a process of change, as change means differentiation and differentiation means the divergence of directions. It is never manifest in fact, but only in principle, as the state ever further away from which evolution is always in the process of developing (51). We can add now that if pre-existent ends unify *initially* disparate elements by *attracting* them from *ahead*, then common origins unify *eventually* disparate elements by *impelling* them from *behind* (103). That is the inversion.

Bergson's position is best described, I think, as an immanent finalism. Life “takes directions,” he writes, “without arriving at ends” (102; cf. 16). Life is purposive because it is directional, which means that its shape is not entirely the result of a series of accidents pressed into form via the mechanical force of external circumstance. But the cause of life's directionality is not teleological; it does not pre-exist or reside outside of the contingent trajectories taken by life over the course of its own unfolding. The cause of evolutionary directionality is rather immanent to that directionality itself, interior to it. External causes shape, divert, and constrain it, but they do not explain it. This is the idea behind Bergson's claim that it is the “movement” through which novel forms are generated that “constitutes the unity of the organized world,” and that the exterior force of “adaptation explains the sinuosities of the movement of evolution, but not its general directions, still less the movement itself” (105 and 102). Bergson offers the image of “the wind at the street-corner,” dividing “into diverging currents which are all one and the same gust” (51; cf. Cunningham 1914: 649–650). The air owes a bifurcation in its current to the mechanical influence of its encounter with the corner, but the directionality of its movement, which both precedes and survives its division around the corner, has to be explained in another way. No matter how many times it is divided and diverted, each new current continues an original gust in a new direction. It is the unity of the evolutionary movement, by analogy, that each of its forms has in common. Just as their unity lies behind them, so too does the finalistic force that accounts for it, the originary impulsion that is prolonged through the movement that differentiates them. Bergson calls it an impetus, the *élan vital* (101).

3.3 *Tendency*

What is an impetus? Bergson is emphatic that it is first and foremost an image borrowed from psychology; that is, “it is only an image” for life, yet “no image borrowed from the physical world can give more nearly the idea of it” (257). This is because “the essence of the psychical is to enfold a confused plurality of interpenetrating terms,” and in this sense it should be said that “life is of the psychological order” (257). There are five other mentions of the psychological nature of life in *Creative Evolution* (51, 54, 77, 86, 208).³ One has to be careful about how to interpret them (cf. Ansell-Pearson 2002: 137, 2005b: 68). One instance in particular has attracted a lot of attention. This is the apparent definition of life as “consciousness launched into matter” (Bergson 1998: 181; cf. 261).⁴ Bergson is clear, however, that life only *appears* “as if a broad current of consciousness had penetrated matter” (181). By consciousness here, Bergson means a “current”—elsewhere he says “wave” (250)—“loaded, as all consciousness is, with an enormous multiplicity of interwoven potentialities” (181). What makes the evolutionary movement look like a current of consciousness is this multiplicity of interpenetrating tendencies. In the equation of life with consciousness, it is the idea of interpenetrating tendencies that is at issue (257). Bergson does not contend that consciousness really did penetrate matter in the constitution of the first living cells, for example; he says rather that it is *as if* that is what happened. Life appears as such, it makes sense to consider it as such, but such is not in fact what it is.

Why the appearance? Life is essentially movement or mobility (128). The invisibility of a movement means that its past swells with it as it endures. The elements of a continuous movement are tendencies, tending toward some limit, whose progressive materialization over the duration of the movement describe its evolving shape. When Bergson claims that “between mobility and consciousness there is an obvious relationship,” or that “every [mobility] has a kinship, an analogy, in short a relation with consciousness,” he has these attributes in mind (109 and 2004: 304–305). Understood as mobility, life can be seen therefore to evolve “exactly like consciousness, exactly like memory” (1998: 167). For consciousness and memory are defined by “continuity of change, preservation of the past in the present, real duration” (23). This is what it means to say that there is something consciousness-like in the evolution of life. The best way to grasp the analogy is via the materialization of tendencies over time. And the best model we have for how to understand tendency is that of our own consciousness (Bergson 1998: 54; cf. 201–202). A tendency is not yet an actuality; it is the potentiality to become some actuality if unthwarted by the other tendencies with which it conflicts (13). When Bergson

³Bergson makes similar claims, with similar qualifications, about matter as a whole and consciousness as well (cf. 2004: 292–293, 313, and 331).

⁴Alliez 2013: 69; Barr 1913: 646; Balz 1921: 637; Gunter 1999: 172; Kreps 2015: 171–172; Rignano 2014: 128. This is a small selection. The conception of life in terms of consciousness launched into matter plays a central role in most commentaries on *Creative Evolution*.

claims that tendency “cannot be resolved into physical and chemical facts” he is stating the obvious, for only actualities can be resolved into the physicochemical components that comprise them (1977: 114). This is one important reason why evolution cannot be exhaustively mechanistically explained. This is also why the idea of psychological impetus, the effort by which a psychological tendency is actualized in image or action, is the best analogue we have for life.

Tendencies are less like the component parts of an organism, less still like a group of objects placed side by side, and more like “psychic states, each of which, although it is itself to begin with, yet partakes of others, and so virtually includes in itself the whole personality to which it belongs” (Bergson 1998: 118). This is how we ought to understand the suggestion that life, as original tendency, is virtually instantiated in the developmental trajectory of each particular tendency that is dissociated from it. It is virtually immanent to them both as the global tendency towards temporalization *and* as a domain of interpenetrating tendencies from which every actual developmental trajectory can draw in evolving, even after they are externalized from out of that domain.

I have said that the unity of this movement is owed to its commonality of origin. We can now see that there are two senses to this claim. According to the first, the evolutionary movement is unified historically, as each lineage ultimately originates in a common ancestor, something like the way every marble sculpture human history has ever produced can be traced back to a developmental origin in the biogenic formation of minerals. In this sense, every distinct species and individual being is a moment in the ongoing elaboration of a single history, an unfinished event, and can be traced back to the one common origin of all evolvable terrestrial life. Its difference from the history of marble is that every present living being retains the whole evolutionary past in the form of organic memory. This is what it means to say that life endures (15). According to the second sense of the claim, the common origin of all life is in turn the manifestation of a densely heterogeneous tendency towards indeterminacy, implicating within itself an interpenetrating mass of virtual tendencies as well (258). This global whole is contracted and instantiated in the actuality of each extant evolutionary trajectory, unifying every living being with every other as dissociated parts from the whole that implicates them. The *élan vital* is both the originating condition of all living forms as well as the immanent unification of the divergent directions taken by the evolution of those forms via the register of virtual tendency that is instantiated across each (cf. Deleuze 2006: 94).

In sum, Bergson’s form of finalism consists in (1) a reconception of externalism, (2) an inversion of its location of unity, and (3) a reconfiguration of what it is that accounts for the existence of that unity in the first place. (1) Bergson conceives the “whole” to which purposiveness is attributed not as the sum total of living entities in harmonious relation with each other, but as the evolutionary movement whose unfolding generates each of those entities from out of itself. As we will see, this means, for Bergson, that stable forms—whether of the organ, the individual, the species, or otherwise—are in fact best understood as the outlines of the directional movements that run through them. (2) Bergson detaches externalism’s principle of unification from the teleological postulate of a pre-existent end, or plan, and

relocates it in the originary impetus driving the evolutionary movement from which stable forms are to be derived. Finally, (3) he reconfigures the commonality of the origin of movement according to the psychological interpenetration of life by reformatting it through his modal mereology and positing it as both the register of interpenetrating tendencies as well as the essence of tendency as such, which is to extend itself to its limit, dividing in response to obstacles in order to extend itself ever further in divergent directions.

4 Conclusion

The problem with vitalism, for Bergson, is not that it insists on a difference between life and matter, but that it incorrectly individuates the difference-maker between the two. Bergson's difference-maker is something like Driesch's entelechy, though it is not an actual force—whether material or immaterial—but rather a virtual tendency. More importantly, its position is external to the ostensible individuality of any given biological form. Driesch's entelechy safeguards biological individuality; Bergson's *élan* explodes it. As a consequence, if Bergson is to be considered a vitalist, he should be positioned diagonally to the ideas of biological individuality, organization, and autonomy that are taken to characterize the “contemporary vitalism” at issue in Bakhtin's critique, for instance. Bergson is better understood as advocating for a tendency whose finality is immanent to it, and a directionality or orthogenicity that resides in the whole movement of evolution understood as a single event. For this reason I think that Bergson may be better situated in line with thinkers that problematize biological individuality than with the thinkers—the vitalists—that attempt to safeguard its reality and explain its irreducibility. Another way of putting the point is to say that what is at stake in Bergson's peculiar form of vitalism is the incomplete individuation of biological forms in the movement of evolution and their association with each other, both in organized quasi-wholes, and over time, in generationally striated processes of populational differentiation.

This, then, is Bergson's vitalist wager: contra Driesch, *there are no complete individuals in the biological domain*, and thus instead of having to account for their individuality, it is rather their trans-individuality, or their openness both to each other and to the evolutionary process through which their closure is effaced, that has to be accounted for—and Bergson does this through the idea of a tendency realizing a directional but open-ended progress across them. I think there are at least three possible benefits to this shift. One is that it avoids the problems that Bergson identifies in Driesch's brand of vitalism, though of course this only registers as a benefit if one accepts Bergson's criticism of Driesch. A second is that it seems nicely fitted to theories of deep homology and developmental constraint, as the *élan* is intended as an explanation of the deep continuity running beneath ostensible individuals, and it is an explanation that mediates the force of selection in accounting for the generation of heritable traits by positing directional constraints—in a process of what Bergson calls canalization—that trend and pattern the evolutionary movement.

Finally, a third possible benefit might be located in the fact that since the *élan* is in some ways an anti-individuating, or perhaps a trans-individuating tendency, then it might also be brought into a profitable alliance with recent work on the near-ubiquity of symbiosis, the microbiome, and holobiont or related revisions to biological notions of individuality. These remain for now only intimations of how Bergson's distinctive variety of vitalism might be thought today.

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