Ernest Partridge, ed., Responsibilities to Future Generations. Buffalo. NY: Prometheus Books, 1981.

Holmes Rolston III

The River of Life: Past, Present, and Future

To speak of a river of life is more poetry than philosophy, but images have an evocative power that may launch critical reflection. Life is organic, and much too complex to be illuminated by many of the features of a simple, inorganic river. Our purpose here is only to abstract out the notion of a current, a naturally impelled flow that is energetically maintained over time. Life is often said to be a countercurrent to entropy, its negatively entropic flow in that respect the reverse of a merely physical current; still the notion of a current is generic enough to provide considerable insight into the life process. It provides the thought of continuity and ceaseless flow in a life-stream that transcends the individual, and here we gain a model fertile in its capacity to channel together ideas that under other gestalts become differentiated into troublesome opposites. In this processive on-rolling we can find a confluence of the actual and the potential, the self and the other, the human and the natural, the present and the historical, and the is and the ought.

Most of us attach life to the immediate present, to encapsulated individuals, and we locate the ethical life in the interrelations of subjective human selves. We often find life to be a notion that belongs incongruously to biology and to ethics, to nature and to culture. We do not here mean to deny that the individual human life is a substantive matter, of moral concern, when we notice that it is also an adjectival property of a collective, still more substantive flow, which also is of moral concern. This concept of a current in which the individual is buoyed up and on is at once biologically viable, culturally informed, and satisfying to many of our deepest ethical intuitions. Its corporate nature perhaps does not give due place to that individual integrity that is so well served by the more atomistic paradigms, but our experiment here is to discover an ethical vision of more scope, one with a more open run than any single life can provide. The thesis here is that an individualistic ethic is shortsighted and needs to be corrected by a collective vision, as a result of which we have clearer insight in five areas especially problematic under traditional ethical analysis.

1. The actual and the potential. Our notions of justice have been finely honed around the concept of individual rights as these can be defended against the interests of others, and the casuistry that has here developed has some cross-generational usefulness. Still, when we move beyond our grandchildren, we falter; for future persons are indeterminate and remote, and one wonders how present persons have duties to such faceless nonentities. Our ethical skills deploy ahead uncertainly, owing to the lack of concrete, identifiable rights-carriers. We who are actually present do not know how to adjudicate our interests against such a potential "they," claimants all too nebulous and "iffy." These anomalies dissipate in part when life is observed as a corporate current, for then there is a present carrier of this possibility. This future belongs not to some abstract, hypothetical others; it is our future, which we who exist now do bear and transmit. It does not appear ex nihilo, but flows through us, it is the future of our generation, the future we generate, the downstream of our life. We are dealing with a potentiality of and in the actual.

The river has a geographical extension, which, though we typically view the stream at one point, we easily keep in mind. As an analogy it helps us to realize that, though we now see life locally, it has chronologically extended reality. We may then say that this present life, which we now compose, ought to have this tensed potential. Humans have, so to speak, a class right to the future; this race ought to run on, collectively, statistically, although we cannot individuate our posterity or prejudge entirely now "their" needs, "our" needs then. The mature self is able to envision itself in any present moment as enjoying but one slice in a temporally extended life. To be a self is to endure over time, in the processive stages from birth to death. But those endpoints of articulation, so vital in an egoistic ethic, are submerged in this life-pulse, which overflows those very individuals that it flows through. We pass away, but we pass life on. We share a common life with posterity, not in that they now are available for reciprocal obligations, but in that a common life is transported from here to there. This corporate passage also treats as concurrent what are usually separated out as deontological and teleological concerns. It would be a present. intrinsic wrong to deprive ourselves of a future, as it would also be wrong for us not to be instrumental to future good.

For a living thing to be actual is to be generative. If we think electrically, no current actually flows except as maintained by a potential. Life is another sort of current, more autonomously propelled, in which being actual and having potential are much the same thing; being is always becoming. Biologically, life must be procreative; the life-stream is one of parenting and growing, sowing and reaping, a dynamism that turns acorns into oaks into acorns into oaks. Further, this natural, seminal adventure has its human, educational extensions. We are so built as to be both reproductively and culturally projective. That is the notion of con/sequences, that there are "sequences" that follow "together with" past and present acts, and these consequences overleap the death of the individual. When there appear any living things, any life ways, whose consequences are not sufficiently projective, those forms may enjoy local

successes and values, but they soon vanish. That is so, and, we shall later add, it ought to be so.

The river flows under the force of gravity, and the life-stream moves under an inner conative urge. The philosopher may have trouble supplying rational arguments why this life, now instantiated in me, should want to flow on, but he is unlikely to eradicate this natural passion. If any do fall into an entire disconcern to project themselves, careless about the future, they will soon be eliminated as unfit, the stream of life by-passing them. Such failure of nerve will be swept aside by other currents in which more fight remains. Most of us are going to find that the will to life which we have inherited from past generations floods through us, and thence to the future. Thus, fortunately, to a certain point, our class right, and our duty, and our compelling natural urge are discharged in the production of a surviving, future generation.

Unfortunately, this is not entirely so, else we should not have the problem of the *ought* and the *is*, to which we will come. More unfortunately still, we appear to have reached troubled waters, where these productive urges to reproduce and build will, without ethical control, become pathogenic and misfit us for survival. Our actual lifestyle might now be reducing our potential, which would be lamentable both biologically and ethically.

2. The self and the other. A person's ethical capacity can be roughly measured by the span of his "we." Egoism marks off an isolated "I," and beyond this boundary discovers only "he" and "she," finding ethical contests in the clashes of these irreducible cores, the one against the many, each unit pursuing its own enlightened interest. Altruism finds "others" and is also pluralistic, but there now appear sympathetic capacities. Beyond both egoism and altruism, the "I" is sometimes so moved to identify with a "you" that the capacity to say "we" emerges. My self is stretched over to the other, and ethical concern does not stop with my skin but overflows to my kin. Ethical maturity comes with a widening of that sense of kinship, and, with broad enough recognition of this togetherness, the self is immersed in a communal life.

Most of us can dissociate our identity beyond our own memory traces and reassociate it with parents and children, even with our ethnic and national kind. We could not be biologically or culturally successful without the capacity to do this, for we could not, as we have said, be sufficiently projective. There is a certain biological and psychological soundness to egoism's focus on the individual organism, but we also have to recognize the provision for regeneration. Thus we have a natural beginning for the development of the moral sense in the defense not merely of the self but of the in-group. The two senses of kind, "considerate" and "related," have a single etymological origin. The evolution of conscience proceeds with a widening out of both senses of kind so that they become less familial, less tribal, more ecumenical, reaching in the end a universal moral intent, and this extended sweep is not only a global but a chronological one.

We may notice here that far-off descendants and distant races do not have much "biological hold" on us. Across the era of human evolution, little in our behavior affected those remote from us in time or in space, and natural selection shaped only our conduct toward those closer. Now that our actions have such lengthened impact, we may indeed need ethics to survive, since this is required to enlarge the scope of concern for which we are biologically programmed. If our ethical concern can evolve to equal our awesome modern capacities to help and to hurt, around the globe and across generations to come, in such moral development, we would no doubt find new truth in the old moral paradox that a concern for others benefits one's own character.

In this life-current, distinctions that earlier were so clear begin to dissolve, Even the egoist knows that a person can have a duty to his future self, and hence he sacrifices for his retirement. All his stages are eventually present, and "now" has no favored status. But what of parents who bequeath possessions to their children and grandchildren, what of the farmer who for them conserves his soil, what of donors who endow the communities and institutions they have cherished? If we narrowly define the self, we shall say that prudence has become charity. But if we recognize the larger, more enduring group from which the self takes its identity, we will redescribe as a sort of corporate egoism what first seemed private charity; for the enlarging self extends into and continues in the course of the things that it loves. What then happens as this sense of kinship widens further under influences less ethological, less ethnological, more ethical? We may wonder whether egoism has vanished and altruism remains, or vice versa, as we wonder whether the drop of water remains or dissolves in the river. There are those who insist that every corporation is a fiction and that any goods and interests it may have are analyzable into those of individuals, and they will have here somehow to assign fractions to egoism and to altruism. But this is a type of ethical nominalism, not well served by recent biological and sociological theory where the goods and interests of the individual are constituted interdependently with the larger genetic and social movements out of which that person is composed,

When one pauses to consider the life that one "has," only an ignorant person would think of oneself as really "self-made" or "self-sufficient"; it is rather the lonesome self that is closer to fiction. The natural and cultural truth is in this otherness of the self, that we are participants in a shared flow, of which the self is an integral but momentary instantiation, rightly to be cherished in what autonomy it is given but responsibly and responsively to be emplaced in its supporting matrix. The old Jewish fathers put this aphoristically: "If I am not for myself who will be for me? And if I am only for myself, what am I?" (Hillel) The train of thought and of life we are following here lets us apply this to a generation; and if there are those who find this application difficult, we recommend that they go and stand at their great-grandparents' graves.

Love cares what happens after we are gone. The biological roots of this lie in parenting, but this concern matures and bears fruit in culture and in ethics. All authentic love is causally transitive, propagative, projecting that level of life that one most enjoys, but in this it goes out to invest itself in the other. Where this is not so, where one is careless about what happens after the demise

of the local seif, then there is only pretended, inauthentic love, stagnant self-love, unworthy of survival. Where this is so, we gain a much richer notion of the "commons" than has lately been current, for we no longer have self-aggrandizing egos, each wresting out its share of the commons, kept in check from stupidly overloading it only by finding some keener, more calculating self-interest to which we can appeal. The self can live in love in and on this commons which we commend, but on the fought-over one it can live only in careful fear. Those who join this collective current find new meaning in the earth's carrying capacity.

3. The human and the natural. It is no coincidence that environmental ethics and intergenerational ethics are often a single issue, for our survival requires a habitat. It is typically, though not invariably, the case that what is good now for the environment is good for the human future, and we next find that the flow of this living river erodes and rounds off the sharp edges of the human/natural distinction. Soil, air, water, forests, grasslands, seas, the fauna, the flora are confluent with what, seen too narrowly, too artificially, some call the course of human events. Ecology has taught us vastly to expand our notions of circulation; human life moves afloat on a photosynthetic, nutritional biocurrent, with organic life in turn dependent on hydrologic, meteorologic, and geologic cycles. Life does not stop at the skin here either; it is an affair of natural resources. All that we are and have was grown or collected. If that word resources by its prefix "re" introduces the thought of a source that has been "turned into" human channels, away from its spontaneous course, it recalls more prominently the substantive earthen "source" out of which all springs.

No life form, the human included, can be projective enough to survive if it is not also, at a minimum, environmentally homeostatic. "Homeostasis" is not so much a static word as it is a hydraulic word, portraying in its biological use the steady state of a life-current maintaining itself over time in exchange with supporting movements in the physical environment. Consumption is always at odds with conservation; life endures in a delicate tension of the two. In prehuman life this balance is nondeliberate; with human life the challenge emerges to make this deliberate—and ethical. Homeostasis need not preclude evolution or historical development, but it does specify that any future human course shall include the carrying on of these natural processes with which collectively we move. We can "regenerate" only if our sources are "renewable." In both these words the prefix "re" no longer has to do with the making over of something natural into something human but, rather, with a human continuance by fitting into an uninterrupted flow of earthen sources. It was those concerned with natural conservation who early became concerned about future generations.

Life is a current in organismic as well as in environmental biology. Being water-based, life nowhere proceeds without its fluids, whether it be the sap in the trees or the blood in our veins. These support the protoplasmic process,

and when we consider its future we speak still further of a genetic flow. Though individuals are the necessary carriers of genes, this notion again is not so individualistic as it is populational. No one of us carries all the human genetic load, each one draws an integral humanity from a pool that enormously transcends what any one person owns. It is to the regeneration of that communal reservoir that I contribute. Biologically, I am perhaps urged to preserve my germ line in that pool, as this may be edited by natural selection for the most viable genetic reservoir; ethically, the self can also enlarge its concern to care more broadly for the entire genealogical stream. If this seems to reduce our human life too much to the microscopic, genetic level, then we can readily return to the macroscopic, personal life, where the phenotype expresses a genotype, but always remembering how the subjective self manifests this genetic current.

It is fruitful to view the evolution of life as a kind of information flow. Against a basic physical flow, the disordering tendency to increase entropy, a biocurrent emerges with the capacity to build up and reproduce ordered, organic structures, passing this constructive information along genetically. In this nondeliberate sense all life is intelligent, logical, communicative, and the linguistic models employed in genetics give evidence of this. This flow diversifies, becomes more sophisticated and creative, more sentient and intelligent, until at length there emerges the capacity in humans for culture; and then a radically new sort of information flow appears, surpassed in significance only by the initial appearance of the negatively entropic life process itself. Acquired information can be transmitted, linguistically stored, and evaluated, and intelligence becomes deliberate. But the cultural process is still a part of, if the apex of, a natural life process. Life is always a cybernetic question, one of information transfer, as life is steered along over time, with both biological and civilized currents. The projecting of ourselves biologically and culturally, different though these may be, are inseparably integrated facets in the survival process.

Life is one of nature's projects, but it has flowed on so as to become one of our projects. We are the tip of an iceberg. We do dramatically emerge out of nature, but beneath the surface life remains nine-tenths natural. What is often wrong with the model of a "contract," in terms of which ethics is argued out, is that it is anti-natural, finding individualistic humans reluctantly banded together against threatening nature. There, rights-talk understandably appreciates individuals and depreciates nature. This countercurrent of the human before the natural is not wrong, as the notion of a countercurrent of the organic before the inorganic is not wrong, but both become fragmentary truths when placed in a still larger picture that sees an interflowing of the human and the natural, the biological with the physical. Nature gives us objective life, of which the subjective life of the individual is but a partial, inner face. Upon this given ecosystem we are what biologists call obligate parasites. and at this point we become interestingly confused - are we morally obligated to conserve and value merely the human or also the natural, since these have fused? Those who are ethically conservative will prefer to insist that ethics

applies only to the human race, with all other processes auxiliary to this; those who are ethically liberal may find that their moral concern ranges over this catholic river of life and even includes the landscapes over which it flows.

4. The present and the historical. The river is a billion years long and persons have traveled a million years on it, recording their passage for several thousand years. If the river were to stretch round the globe, the human journey would be halfway across a county and we would have kept a journal for only a few hundred feet. The individual's reach would be a couple of steps. Such a linear scale admits the natural length of the river, yet it does not record an increasing turbulence in the human epoch, owing to the augmented information-flow. What is upstream flows down so as progressively, logarithmically to become tributary to more depth and stir. This past distance traveled is only partially forgotten and gone; it is rather largely here. It survives in us; for the present is what endures out of the past.

We are, as it were, the "is-ness of the was," not only in an evolutionary sense but also in an educational sense. Socrates and Moses, Jesus and Buddha, Newton and Copernicus, are not merely prior to us; their effects have been carried here by thousands now nameless who cherished and taught them, so transmitting them across time that something of them is recomposed in our composition. We sometimes think of the past as a kind of corpse; the dead are nothing but memories and phantoms. But if life is an on-rushing current, this is not so; for it is the past that germinates us. Our present life is just that past life in a cumulative, contemporary incarnation. In a legal phrase, we are both the executors and beneficiaries of the "wills" of our forebears, which outlast them. We do well to "will" that this providence lasts on, to ensure the "will-beness of the is." In a natural idiom, we have roots, and we ought to have fruits.

Life is a splendid sort of "project," the ultimate drama. Some of its meanings are, and ought to be, transient. But the deepest meaning is found not merely in the present but, as in all narrative, when leading features of the past survive, deepen, and cohere to govern across repeated chapters in a whole plot. Incidentals may be delighted in for the present, but they pass away, peculiar to an era. Discontinuities and emergents surprise us; still each generation's noblest adventures are tributary to a meaning flow that is intergenerational. In the flow of a symphony, the present melody is enjoyed in itself, but not only so; it often recapitulates and leads. Else there is less beauty and no real movement. That we cannot entirely foresee the outcome is a positively dramatic feature, and so we do not and cannot know the future course of this life tide, whether of success or of catastrophe. But that does not diminish in present actors a duty to thrust forward what they most cherish. Nor does this duty diminish their own immediate integrity; it rather establishes it.

Every scientist, every humanist, every educator, and every parent knows how the single life needs these dimensions of retrospect and prospect. We are set in motion with what was delivered to us; we carry it on a bit, but not to its conclusion; we pass from the scene, and our students, disciples, and children carry on. This age has seen the remarkable revelations of Watson and Crick, but only as they follow those of Darwin, Mendel, and Linnaeus; and others will continue the succession. Democracy has been a long time building, and most of us would die to pass it on. The musician, the artist, the novelist, the philosopher—all flourish in the heritage of their predecessors, and they themselves create works to be appreciated now but also to pass into the objective public domain. Particular lives and labors are most often forgotten, but that does not mean that they were not part of the cybernetic circuits over which a culture was transmitted.

No one should deny important asymmetries between past, present, and future; they are well recognized in what McTaggart called the temporal A-series. where a knife-edged present moves inexorably across time to convert the future into the past. But it is likewise possible, more scientific, and just as moral, to view time as what he called a B-series, having only an earlier-than/later-than in a serial whole.2 If we couple these series, past, present, and future are not three things, with only one convincingly real. But there is one life-stream that bears the predicates of the past into the future by conveying them through the present. Past, present, and future are not strung together like beads on a string. each a detachable existent simpliciter. They flow together like the upstream and downstream of a river, only more organically. The myopic, arrogant "now" generation thinks of the past as dead, the future as nonbeing, with only the present alive. The far-sighted see that to be alive in the present is to carry the past on to the future; and, if so, it is rather the ephemeral "now" generation that is as good as dead, for they do not know what survival means. We are constituted in memory and hope, and it is indeed a prophetic truth that where there is no vision, the people perish.

5. The is and the ought. Life flows on. Life ought to flow on. Few can specify how we make that descriptive-prescriptive jump, but here, where biology and history draw so close to ethics, it is made easier than anywhere else. Fact and fact-to-be-desired join in "the ought-ness in the is," which is not to endorse all, nor to deny that some life-forms are passing, but to cheer for this fabulous life project. Not only in our genes but also in our consciences we are constructed for a sort of keeping faith with those upstream and down. Here are joined the twin meanings of "conduct" that constrain the present; we ought each and all to conduct ourselves (to behave responsibly) so as to conduct ourselves (to lead the race safely on) from past to future. Life protects life; such survival is "becoming," again in biological and ethical senses. Should we fail, that would abuse our resources and abort our destiny.

This judgment is not entirely shared by those who find life's currents to be all in tragedy. The older, Indian Buddhists called the world a maelstrom of dependent origination, one misery causing another, but they hoped to find a deliverance by putting out these urges in a quiescent *nirvana*. We may agree with them that an unrelieved, individualistic plurality is bad, an illusory gestalt, that intensifies suffering, but we disagree in our wish to conserve and

corporately to integrate the world of birth and death, preserving just that blessed life-stream that survives these agonies. The recent nihilists screamed that life was absurd and, in despair, said they cared nothing about its going on. Both rightly perceived life's suffering, but underwent it so intensely that they misperceived its meaning. This suffering, however, can become a sacrament of life; it takes on significance as, and only as, in these tears, we insist on the projection in this world of this life-stream. And, whatever their theories, in practice both still found life heroic—the compassionate Buddhists in their reverence for life, and the adamant nihilists in their protest that we manufacture meaning despite our nothingness.

These extremes aside, most of us find our earthen life to be more a gift than a meaningless given, a gift that obligates us as trustees to the task of carrying it on. Against all the arguments, sometimes forceful ones, about nature's heart-lessness and culture's mindlessness, here we are, alive and even well, products at once of nature and of culture, glad of it, and rather persuaded that the real tragedy, the ultimate in absurdity, lies not in our being here but in the possibility of our failing to pass life forward.

We do not suppose that there is no discontinuity when the *ought* emerges where hitherto there was only an *is*. In the wild, each fends for itself competitively. The cooperative flow is an unintended consequence of this self-interest, which is edited by natural selection to shape the survival of the most vigorous species. Life is advanced by a kind of libido, and, while we must be careful not to judge this to be bad, neither is it moral. Looking out after one-self has its necessary place in this ensuring of life, although this is not sufficient for its continuance; it must be kept in check by the interests of others, by ecosystemic balances and evolutionary pressures. What *is* the case in the pre-human world, and often even in the premoral human world, can and henceforth *ought* at deliberative levels to be accomplished morally.

One's self-interest, which is still required, can now be kept in its desirable place, sufficiently checked by capacities for sympathy, by judgments finding rightness in the corporate currents of life, to which one belongs. What before was externally and genetically controlled can by this advance be internalized and freely acted upon. The moral sense then becomes a new form of cybernetic control. But the effect of that switch can be, and ought to be, to ensure the continuity of a life process that has long been under way. Indeed, such are our recently maturing powers for the exercise of self-interest that, unless these ethical capacities also unfold, the earlier natural checks may no longer be effective and we may plunge into that terminal tragedy which we most fear.

In front of Eiheiji, Dogen's mountain temple in Japan, there stands the Half-Dipper Bridge, so named because the Zen sage was accustomed to drink there; but he would take only half a dipperful and pour the rest back into the river, rejoicing in its onward flow. We may puzzle about whether this denies or fulfills that earlier, Indian Buddhist estimate of the samsara world, to which we just referred, but we must surely admire so simple a gesture with such a rich ethical concern. There is much scientific analysis now of the "energy

throughput" in the biosystem and in the economy. A moral concern for a "life throughput" would help even more. A fair criticism of what we have proposed is that it is impressionistic and difficult to make "operational," so accordingly we do also need the ethical logic that unfolds under other models of life and responsibility. Their arguments may help us, in the conflict of life against life, to protect individual integrity, to compute maximums in quantity and quality, and to balance each against the other. But we operate as impressed by our metaphors too, as well as by our calculations, whether those images are of the survival of the fittest, or the social contract, or lifeboat ethics, or the way of the cross. If seen as a symbol, this river of life is no longer merely a metaphor, it is a truth that bears moral insight, because it helps us see more deeply how the life process is and how it ought to be.

NOTES

- 1. Garrett Hardin, "The Tragedy of the Commons," Science, 162 (Dec. 13, 1968), 1243-1248.
- 2. J. M. E. McTaggart, *The Nature of Existence*, vol. 2 (Cambridge: University Press, 1921), chap. 33.