



Leading Causes of Life Initiative

Leading Causes of Life: An Integrative Idea

Jim Cochrane

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Commenting recently in the *Journal of the American Medical Association* (JAMA) on the unexpected, atypical, declining life expectancy in the USA, Dr Howard Koh of Harvard’s School of Public Health, Anand Parekh of the Bipartisan Policy Center in Washington D.C., and John Park, also at Harvard, speak of ‘years of insults to the nation’s health’.¹ Key factors of concern for them, on which they want further research, are the ‘social determinants’ of health – ‘income inequality, unstable employment, divergent state policies and other social dimensions’ – that produce systematic, enduring patterns of ill-health. They *also* want an expansion of the idea of the ‘leading causes of life’ but ... they don’t tell us what that means.

The idea was first introduced by Gary Gunderson, who wrote about it with Larry Pray.² Since then I³ and others^{4,5,6} have engaged with him⁷ on how effectively to understand it and how viable it is. A clever word play on the public health idea of the ‘leading causes of death’, is it however a robust and useful way of viewing not just health but human life as a whole in all its dimensions?

This essential question has driven interdisciplinary discussions, debates and some publications since. What follows is my assessment of where we have arrived, how robust the idea is, and why it matters. Deeply informed by the insights and knowledge of others on whom I depend,⁸ it also reflects my own history: first in my training in organic chemistry and related experience in industry, then in NGO activism through a Christian resistance organization ultimately banned by the South Africa Apartheid government, later as a scholar of religion and society. My understanding of the ‘leading causes of life’ is thus deeply shaped by the fraught dynamics of life in both pre- and post-Apartheid South Africa and, more recently, by what I have learned from colleagues and friends internationally who work in health, community development, and more.

The ‘leading causes of life’ framework is remarkably coherent and comprehensive, capable of embracing human complexity even in highly challenging circumstances. Not a typology or tool-set, it shifts the focus from risk factors to generative dynamics of health. When Gunderson first proposed the idea, it was not just to invert the logic of the ‘causes of death’ or simply to create an alternative list of causes, but to advocate an *entirely different way of seeing*. The causes of death are relatively simple to identify but the causes of life are inherently complex. Life is adaptive, curious, generative, expansive, resilient, in fact prosilient,⁹ filled with awe and even beautiful.

As an integrative idea, the ‘leading causes of life’ combines five heuristic concepts that can be described as ‘causes of life’: agency, coherence, hope, connection, and intergenerativity. Each is robust enough to encompass a wide range of scientific insights (and their tool-sets!). All, as we shall see, also involve a vital moral foundation. Taken together, they help us work with the generative human capacities that express and enhance life.

This is a set of exceptionally important insights worthy of wide attention. As MD Philip Pizzo notes, also in a recent JAMA article, some shift in perspective is needed: ‘physicians and other clinicians [need to] think differently about how to support the longer lives of their patients, focusing on how to make them more meaningful and functional and less attenuated by the morbidities that lead to medical, social, and financial dependency.’¹⁰ Leaving aside that the goal of living longer by beating back death is not the key thing, this at least heads in the direction of our understanding of the ‘leading causes of life.’ What do we understand them to be?

Two ground rules are the starting point. First, we accept that the basic requirements of biological life are essential, a *sine qua non*; this requires no further discussion other than to note

that our bio-medical condition is affected by many other factors. Our focus is on what, beyond mere biological life, is crucial for human beings, their health and their flourishing.

Second, because in nature and in our lives we only ever experience 'effects' to which we then attribute a 'cause' (for we never see any 'cause' directly), what we call a 'cause of life' is a judgement we add to our experience that always leaves room for error or misunderstanding but also, crucially, for expansion (this is no different than any scientific theory). The key issue, therefore, is not whether what we describe as a 'cause of life' is right or wrong but whether it is intellectually well grounded, fits into a larger coherent explanation of experience, and is practically useful.

The five interlinked 'causes of life' meet these requirements. Each comprehends a definable terrain of human experience while none, in reality, is separable from the others. To work with them requires seeing their shifting interconnections and discerning how they work together (more on this below). Keeping this in mind, we describe each of the five causes in more detail ~ and explain why we lodge them within what we call a vital moral foundation.

Agency

By 'agency' we refer to the 'power to do' ~ the capacity, beyond habit or instinct, *intentionally* to act in the world, with potent effect. If one thing marks human beings it is a *capacity for creative freedom* that enables us, to a *degree* that is true of no other creature we know, to add to our experience symbolic systems (language, ritual, art, mathematics, algorithms, etc.) by which we are able to grasp 'lawful' physical and moral orders that shape nature and the world, imagining and understanding possibilities that do not yet exist, and bringing them into being.¹¹ We can choose to do this and not that, now and not later, even imagine entirely new choices from time to time.

This 'creative freedom' is a causal capacity and a mark of every human being irrespective of any other differences. It is not 'liberty' (freedom from constraints), nor 'choice' (freedom of external options), but our ability intentionally to initiate a sequence of events to achieve what nature on its own cannot and, so, to create new things and new forms of relationship. This capacity, though we cannot see, touch, hear, feel, or taste it, is as real as the physiological, chemical or neural material of which we consist. No dualism here, both are vital aspects of our humanity.

Without this creative freedom we would be unable to explain our impact in and on the world, our intentionally causal effects evident everywhere: from controlling fire to launching huge machines into the air, from inventing the hoe to genetic engineering, from complex rituals to contracts and constitutions. In fact, it is powerful enough to enable us, by commission or omission, to destroy the world should we so choose.

We have many indications of the importance of agency for human health and well-being. The play of children is exemplary. More than the mere acquisition of skills it is centrally about exploring new possibilities in the otherwise merely actual before them, testing a possibility in action, and experiencing palpable joy when it is achieved. Play is thus a way of 'working at the world', of learning to engage with it, and, in the process, of learning to live in it alongside and with others.

In psychology agency as 'self-efficacy' is crucial to our ability to cope with what life presents to us.^{12,13} Agency is also central to the American Occupational Therapy Association's view of its role of 'helping people across the lifespan participate in the things they want and need to do through the therapeutic use of everyday activities.'¹⁴ Beyond personal therapy, the human capabilities approach in contemporary community development practice rests on the idea of agency as fundamental to full human functioning,^{15,16} as does the view that mobilizing the assets, tangible

and intangible, that people already possess is more effective than a focus on absent needs or deficits.^{17,18} At its most general, Zygmunt Baumann's^{19,21} sociological insights into 'fluid modernity' (our era) articulate how agency expresses itself in the importance of mobility in the global economy and polity as people go in search of opportunities, safety, or security, sometimes against heavy odds. This includes intellectual and religious mobility, too, as people blend, bend and innovatively reinvent traditional identities and ways of thinking.

In sum: Agency as our creative freedom, as the basic capacity that enables us to live and act creatively in the world, is a core 'cause' of life. As the inalienable possession of each and every human being no matter what distinguishes us otherwise, it is the essential key to our dignity that 'has no price.' To recognize and support this inherent capacity is thus at the heart of the development of human capabilities and central to any educational process, informal and formal, from birth (maybe even before) until death.

Coherence

Coherence is the second key 'cause of life.' It is linked to our agency. Because we have creative freedom, we cannot *not* act in the world. At the same time, we don't do so merely from instinct. We need a sense of how and why we act ~ a way of *meaningfully ordering our experience* of ourselves and of the world. This is why coherence is so crucial.

If everything is haphazard and we experience only arbitrariness and chaos (physical or moral), then we lose coherence or any understanding of how nature and the world is ordered, and so lose something crucial in our capacity to act. To experience anomie (literally, 'no order') is to feel despair and paralysis in the face of the incoherent. The loss of coherence then becomes frightening, if not severely debilitating, and the search for it desperate. Equally, a growth in an awareness of coherence as vital is evident to anyone watching the healthy development of a human child, or to every scientist committed to the experimental investigation of phenomena.

We see this in Aaron Antonovsky's famed work on women Holocaust survivors who thrived when most of their peers did not. He found the primary variable in how well someone copes with significant stressors to be what he called a 'Sense of Coherence'.^{22,23} This depends upon: a) life appearing structured, predictable and explicable; b) resources being available to give one confidence in this; c) a conviction that it is worth investing and engaging in action to meet the challenges. The First International Conference on Health Promotion in Ottawa in 1986 advocates adopting this approach.²⁴ Not unrelated is 'resilience'^{25,26} ~ positive adaptation, or the ability to maintain or regain mental health in the face of adversity. Similarly, positive psychology^{27,28} focuses on what is generative rather than pathological. Keyes,²⁹ for example, speaks of 'abundant thriving', which rests on prevention, resilience, and coping.

Coherence comes from the *capacity* we possess to *add to our intuition or experience* of the world ways of comprehending and ordering the otherwise myriad, capricious phenomena or appearances we encounter in nature and in our relationships with each other. What we add are richly varied, non-material symbolic systems (concepts, images, rituals, languages, mathematics, informatics, and so on), none of which are immediately given within the phenomena themselves. In this way we make sense of both nature and our own place in the world, which would otherwise appear totally arbitrary or capricious.

The simplest example is nature. It is a given and we did not bring it into being. But if we did not assume it conforms to some dependable order, that is, a coherent system of laws, we would

be unable to engage with it in any consistent, reliable way. But we do assume that order and so we look for laws or patterns that help us understand it, and this allows us to do astonishing things. The crucial point is that these 'laws' are not 'lying out there somewhere.' We add them to what we experience. When they are inadequate to our experience, we freely change them, but always in the conviction there is a larger coherent order in nature within which we are embedded. This also applies to our experience of ourselves and our relations with others, a point we take up below in discussing our moral responsibility for our actions in the world.

In sum: Coherence means being able to make sense of life, seeing our life journey as intelligible and neither wholly random nor simply victim to inexplicable external forces. When a sense of order or of the unity of everything fails us, we flail, things appear chaotic and arbitrary, and, taken far enough, we suffer pathologically. This is true for crises in health, in research, or in any human activity. Coherence is thus a second core cause of life and, linked to agency, an imperceptible part of who we are, an expression of our profoundly dynamic human spirit.

Hope

Hope, as a 'leading cause of life,' lies in realizing that for us *possibility (what can or, even more significantly, what ought to be) is greater than actuality (what is)*. In reality, no matter how constrained we are by actualities, we are able to access new possibilities by moving towards life.

Hope is thus far more than mere desire (e.g. for a materially successful existence), sheer wishfulness (e.g. an escape from this life into some speculative afterlife or other realm), mere optimism, or pure will-power. Rather, it is an embrace of our open-ended creative freedom (no zero-sum game here) and the cultivation of our capacities, which are ineradicable, irreducible, and irreplaceable as long as we are human. As with all the causes of life, hope works best when it is social, when it informs our life and not just my life, when it is coherent hope for all.

Hope is thus both a motivating power in its 'potential to regulate our imaginative and agential activities in a steady and sustaining way',³⁰ and a form of anticipatory consciousness.³¹ It has been described neurobiologically as our 'prospective brain'³² but, as with agency or coherence, it is a supersensible, non-material capacity that cannot be reduced to mere biology or evolutionary drives. Charles Snyder's³³ model of hope, which has influenced many psychologists,³⁴ has three components: goals, agency and pathways. Here hope is linked to agency as our ability to shape our lives believing that we can make things happen and can discern pathways on how we might get there, with the motivation to act accordingly (Snyder says that Karl Menninger encouraged him to 'place thinking at the core of hope rather than emotions ~ the latter he characterized as being reactive in nature',³³ and Snyder's innovation was to treat agency as crucial). Hope is also described as 'radical' in the sense that it arises, with evident effect, even when we lack appropriate concepts by which to understand it or face apparent annihilation.³⁵ It therefore also has a permanently unsettling dimension to it, a disruptive character that, like Camus' rebel,³⁶ motivates and sustains our action even when we cannot know its outcomes.

The extraordinary capacities we possess in this regard are a gift. We did not create them but we find ourselves with them. Equally, we *don't create the conditions of possibility* within which we live, which are given to us *a priori*. Within the limits of our understanding, we cannot know whence this *a priori* comes (though we speculate about it). Not knowing does not prevent us, however, in faith, supported by others, from living out of and in response to this gift. We can do

so in ways that are habitual, self-serving or even destructive but, also, towards the highest of which we, as human beings, are capable.³⁷

Hope as 'what ought to be' and as gift takes us to the core of religion as expressive of human experience. We miss its significance, however, if we focus only on its contingent expressions, its historical manifestations in particular traditions that inevitably contain (and often emphasize) many differences. Hope, by definition, is to place one's faith in what does not yet exist, what one cannot yet know, and act accordingly through the gift of our creative freedom, in consort with others who share our hope. Religion, in this sense, is also a social experience of hope that breaks open new possibilities that move towards life, for oneself, for others, for all.

In sum, hope as a 'cause of life' motivates to our ability to exercise our creative freedom in this life.³⁸ Through individual and collective action it helps us embrace and live up to the highest of which we are capable, within what David Harvey calls 'an on-going flow of living processes' in 'the web of life.'³⁹ As social beings, hope is most profoundly our capacity to imagine a different, healthier future, and to gather the energy with and from others to do something to bring it about.

Connection

Connection as a leading cause of life concerns our experience of different kinds and levels of ties or bonds between and among human beings. Humans do not spawn but are born from one another. Connection as attachment is vital to human development from birth onwards, and it is more than biological. It is the basis for human community, without which we barely have the means to survive or thrive.

Connection is crucial to us as an otherwise very vulnerable species for three reasons: For meeting our basic needs and appetites (our 'animality'); in our need for recognition, status and prestige in the eyes of others (our 'humanness' or *Menschlichkeit*); and, in encouraging us in our capacity of creative freedom to strive, beyond our self-interested animal or human needs and desires, for the highest of which we are capable as a species (which we can call 'personality').

Each level is equally vital for us: 1) We cannot eliminate our natural or 'animal' needs without dying as individuals and ceasing to exist as a species; 2) Because we are inseparable from others and need them for our creative freedom to flourish, status and prestige (or recognition and affirmation) in the eyes of others is equally necessary ~ though this is ambiguous because seeking status and prestige can as easily encourage extraordinary achievements as it can lead to horrendous atrocities; 3) 'Personality,' however, expresses the highest of which we are capable in our capacity to transcend (choose to go beyond) our needs or self-interest for the sake of others and for the sake of the whole ~ to be sure, we often fail at this point but we also know that we are capable of it, and we are often inspired by those who, however conflicted, nonetheless live it out.

The importance of connection can also be seen negatively when it is absent (which can cause severe personal or social pathologies). Without connection there is no community, and without community there is no life. The generative power of community is that, like a forest that grows towards the light, it *can* help bend straight the crooked wood that we might otherwise be. That's not given, of course, for a community to which one belongs may be compromised or driven largely by self-interest of one kind or another; this can be powerfully destructive, requiring self-criticism to discern the difference, and intentional action (agency) to live otherwise.

Many studies and ideas evoke one or other dimension of connection. They include the idea of 'social capital,'^{40,42} which has been widely applied in many disciplines and rests centrally on the

notion of 'ties' ~ bridging, bonding, and linking ~ between people. Neurological studies have also emphasized the importance of connection in the complex relationships that human beings enter into,⁴³ as have studies investigating 'adaptive processes' in human psychological development.⁴⁴ Ideas of ecological health, too, stress the importance of connections across family, community, and other dimensions of human relationality,⁴⁵ a theme that is also seen as important to business.⁴⁶ Many new insights into how connectivity works, what works, and why it works are also emerging from network science applied to both natural and social phenomena.^{47,48}

In sum, we find life through a continually shifting mesh of complex social relationships and connections to one another, finding or building communities of various kinds that enable us to adapt to emerging threats and opportunities and that, when they are deeply generative, help us take responsibility for our action in the world and live up to the highest of which we are capable.

Intergenerativity

Intergenerativity as a 'cause of life' is a special kind of connection or relationship of approval, affirmation, or support (we could also call it 'blessing') transferred over time and between generations through which we acquire wisdom, knowledge and skills, and by which we are encouraged, or encourage others, to live up to the highest of which we are capable. As we see among many people who give of themselves to vital community and social organizations, our institutional lives and not just our families depend upon this cause.

Intergenerativity has relational depth and duration, and it is sufficiently important to distinguish it from human connections in general, which can be fleeting, transient, merely pragmatic or strategic, temporally and culturally thin (one of the dangers inherent in the way electronic social media compresses time, space, and relationships). The human species is a historical species consciously, not just instinctually, linked to the past and the future. To survive and thrive we depend upon the inherited knowledge and skills from our ancestors ~ how to work wood or iron, calculate weights and measures, and so on.

Sustaining and developing this 'culture of skills' is a cause of life. More than skills, however, intergenerativity is crucial in encouraging our passion for, our commitment to, the use of our creative freedom in ways that help us take responsibility for our acts and their effects on others (including other creatures and nature itself), a 'culture of will' driven by the question of what we *ought* to do in the world.

It begins at birth and never ends. Eriksson, in his theory of psychosocial development, coined the term 'generativity', meaning 'an adult's concern for and commitment to promoting the well-being of youth and future generations through involvement in parenting, teaching, mentoring, and other creative contributions that aim to leave a positive legacy of the self for the future'.⁴⁹ By intergenerativity we mean a similar concern and commitment, but not just forwards ~ also sideways to peers, and backwards from younger to older people ~ for approval, affirmation and support are not unidirectional.

Insights about the significance of intergenerativity have come from the famous and still ongoing Parenting and Next Generation Multidisciplinary Health and Development longitudinal study in Dunedin, New Zealand.⁵⁰ In sociology the crucial role of people, past and present, who act as crucial, internalized reference points for identity, belief and behaviour, gives rise to the fruitful idea of the 'significant other'.^{51,52} Community psychologists who study 'historical trauma' point to the importance of intergenerativity for health and well-being in the cumulative emotional

and psychological wounding over generations of families or particular population groups (e.g. colonized indigenous peoples). The impact of the deliberate disruption of healthy intergenerativity through the breakup of families and communities in pursuit of exclusive socio-political self-interests is also clear in the exemplary work of the South African Truth and Reconciliation Commission. At the merely biological level epigenetic factors can influence gene expression across generations, suggesting that intergenerativity, though it is not explained thereby, leaves intergenerational⁵³ and, perhaps, transgenerational material traces.⁵⁴

In sum: Intergenerativity as a ‘cause of life’ refers to the way our lives are blessed and nurtured by those who come before and after us, by which we are encouraged, strengthened, enlivened, and better able to shape our own lives and encourage others to make positive, vital choices. Active blessing or bestowing upon one another approval or praise, wishing one well, is then, at root, an affirmation of one’s sacredness as person.

The one key practical implication

If life is complex ~ emergent, adaptive, layered, woven, yet whole ~ then that’s also the only way to view the five ‘leading causes of life’. They are dynamically interlinked, less like defined nodes and pathways in a network and more like a multi-dimensional living ‘meshwork’^{55,56} of ‘entangled lines’ of growth and movement, where persons, things, ideas, passions, and discourses find themselves in ‘knots or bundles’ of relations that run through the human and non-human worlds and through temporal dimensions.⁵⁷

This has one momentous practical implication: *touch one of the five causes and all will in some way be affected*. Find something alive, or generative, and focus there. Don’t try to find what’s broken in the chain and fix it before you can hope for vitality.

For example, connections that help a person or community at the point of their need are also likely to lead to greater agency and hope on their part. Helping an older person who feels no longer useful or that life is meaningless to discover some new, creative purpose (coherence) is likely to enhance their agency and raise their energy for new connections, thus increasing their sense of coherence and confirming their hope. Affirm a young child (intergenerativity) who masters a challenging task and their energy is likely to grow (agency), their curiosity for imaginatively testing new possibilities (hope) to expand.

It’s not hard to compile a long list of possible ‘causes of life’ (we have tried that) but lists only make sense when ordered coherently, and that’s what the five causes framework, built for complexity, sets out to do. Being able to distill that complexity into five ‘leading causes of life’ is extremely useful. Nonetheless, their full force lies in the way they impact on each other. That they do so is no coincidence – their unity is intrinsic. They *all* rest, in some form or another, on the fact of our creative freedom.

It is important to be clear about this. Other creatures also act and have some coherent sense of their being in the world, project some new possibility that can be met, thrive on connections, and pass skills and experience between generations. The profound difference is our creative freedom, by which we transcend mere instinct (learned stimulus and response behaviour, which can be quite intelligent) or impulse through capacities we possess *to a degree* unmatched in any other creature of which we know, and through which we intentionally alter both nature and ourselves. This is what grounds and unites our particular experience of agency, coherence, hope, connection, and intergenerativity in the world.

The unavoidable ‘moral foundation’ of human life

All five causes of life can be viewed instrumentally, as factors to which indicators (direct or proxy) can be linked and measured. But they are wholly misunderstood without a deeper grasp of their moral foundation – without asking towards what ends we live and why. Leave this out, and we would have no means to distinguish between toxic movements that appear to express all five causes from those that are truly generative agents of life. The history of humanity’s destructiveness is crushing, not least when particular communities act in their self-interest against others, and a merely narrow, instrumental view of the five causes shirks from taking responsibility for this. A dictatorship, for example, can leverage the causes for self-interested ends: supporting certain kinds of agency (and outlawing others), creating its own coherent view of the world against others (the ‘enemy’), promoting certain connections to solidify support (but cutting those of anyone who resists), championing a selective history and set of heroes (while denigrating others), and offering a vision in which it and its supporters triumph (while others are vanquished).

This is clearly not a vision of the health of the whole or health for all. The cultivation of the highest of which we are capable as human beings is thus not abstract. It is embodied in the lives of particular people, maybe sometimes even in a specific group or community, who encourage us when they manifestly act out of full moral responsibility for the autonomous, creative freedom they possess. It cuts across kinship ties, social groups, and particular cultures, embracing also those who have gone before as well as the earth that sustains us (an insight present in the Sesotho notion of *bophelo* and other African linguistic parallels).^{58,59} Such a ‘community of spirit’, which can transcend the limits of particular traditions, places or spaces, can inspire us and nurture us by demonstrating not just what *they* are capable of but what *we* are capable of be(com)ing.

Properly understood, the five ‘leading causes of life’ match such a vision on clear grounds: a full grasp of what our *creative freedom*, our agency in the world, actually implies. If, as is the case, we have the capacity to imagine new possibilities and bring them into being ~ to transform nature and ourselves ~ then we have a causal impact in and on the world, and can decide how and towards what ends we intend to use our creative freedom. Whether or not we choose to accept it, we are thus willy-nilly morally responsible for what we do and why. Nothing forces us to choose the ends towards which we will exercise our agency for then we would be determined, not free, and could not held responsible for our acts. Yet we do hold ourselves (mostly) and each other (more often) responsible, in a way we do not expect of any other creature (only we set up or appear before a court, create and adhere to moral credos, constitutions, contracts, and so on).

The link between our agency as creative freedom and our moral responsibility for our actions in the world is thus intrinsic¹¹ (even babies express this in ways for which empirical evidence alone cannot account).⁶⁰ Because we are free to decide on our intentions, we can choose to act towards good or evil ends. We are moral beings, then, not because we *must* be moral but because *we can be*. This places before us the challenge of living up to the highest of which we are capable and anything short is misanthropic in the most comprehensive sense that stewardship of all life is necessary for the survival of any. It means taking moral responsibility for our presence in, and impact on the world itself and, for this reason, is crucial in allowing others to flourish even as we do. This is not imposed upon us precisely because we are free to decide whether we will act merely for our own survival or self-interest or for the interest of all. Though we can neither prove nor disprove it, that we are capable of doing so is manifest.

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6. A list of Leading Causes of Life Initiative Fellows is at: <https://www.leading-causes.com/lcl-fellows.html>.
7. Special thanks to Gary for valuable comments that have helped improve this paper greatly.
8. Besides many others in the Leading Causes of Life Initiative, I am particularly indebted to Douglas McGaughey for critical theoretical insights that underpin the logic and the unity of the five causes of life, particularly the central theme of our creative freedom and the moral responsibility it entails.
9. By prosilience ('leaping forward') I do not mean merely anticipating disruption (cf. Summer Fowler), proactively increasing resilience (Linda L. Hoopes), or responding to difficulties by trying to improve our overall situations (Paul Thagard) but the capacity to see new possibilities that do not yet exist; this will become clearer in the discussions below about agency and hope.
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Leading Causes of Life Initiative
