REACTING TO THE 'FOURTH INDUSTRIAL REVOLUTION': SIDE-STEPPING DETERMINISM

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ABSTRACT

The Fourth Industrial Revolution ('4IR') is a conventional label for some new technologies. A complicated discourse about our human future has crystallised around it.

This paper touches in passing on the ill effects of the smartphone/social-media combination, but is not so concerned with such details. It focuses on the discourse of techno-economic determinism.

This is not new. Since civilisation began, humans have felt themselves dependent on mechanical systems, both technical and administrative. Their resultant suffering has come out in discussions of fate and free will. The 4IR reiterates an old story.

In the Buddha's time, the wound was fresh. Wandering teachers depended heavily on personal charisma, but all had to offer a story about how people's fates were decided and whether/why/how to try to be good.

Bauddhas have always distrusted questions about determinism. Plenty of wrong answers are current, but few good answers. Why keep worrying how predetermined our lives? The point is not to decide the facts but to make choices, to choose and develop our behaviour in helpful ways. Some choices, some ways of thinking-

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and-feeling, are helpful, and others are not.

Still, causality was a hot topic. Did your actions affect your future experiences, and if so how?

The Bauddhas focused on the continuity between the agent and the person experiencing its effects. Is there some permanent Self? No! Will there then be nothing left when we die? Again, no.

Such speculation does not help us in what matters. What matters is to break the causal chains that bind us.

That is how we can understand and react to the 4IR. It may take a lot of work.

1. INTRODUCTION

This paper presents the 'Fourth Industrial Revolution' ("4IR") in a long-term historical context, It sees the 4IR as emerging from the Scientific Revolution and ultimately from the project of civilisation itself.

1.1 Civilisation And Science

Coeval with civilisation is the great human project to understand the physical environment so as more thoroughly to exploit it. Since before the Buddha's time we have been developing technically — and we have had to make sense of each new level of technical understanding, and of what it allows us to do.

The 4IR emerges from such historical processes. It is infused with a sort of Futurism, like the techno-modernism current in Europe over a century ago. Going further back, it seeks to reproduce the intellectual experimentalism of early-modern science. Ultimately, this is a civilisational project, a continuance of what was started in the first millennium BCE.

It reflects an ideology, whereby humanity triumphs, and progresses towards a scientific utopia, by mechanically subordinating itself to certain mathematisable laws (algorithms, roughly). This is deeply entrenched in our global society — it is hegemonic in economics and in policy-making generally, for instance in the management of science. It is mechanistic and determinist, and it encourages people to be self-seeking and self-absorbed. Many espouse it, eager to believe that this will justify and secure their

enjoyment of technology and of consumption generally.

It has drawbacks. Industry, intended to liberate humanity by mechanising drudgery, also enslaves people, turning them into mechanical drudges. The 4IR represents a culmination of this trend.

1.2 Bauddha reflections

We then relate this historical analysis to reflections on the early Bauddhas. Their civilisation was taking off, the economy was booming, but people were quite messed up. Language and life alike were more prosaic than they used to be and people felt unsettled. The complexities of production and administration in a civilised society imposed new constraints. There were some hard-core materialists around — today's most simplistic philosophers and most self-absorbed oligarchs would have felt at home. The Buddhists were keen to avoid that thinking — and they were equally keen to avoid the standard alternative, which was to take flight into idealism

Humanity easily gets caught in binary traps. For instance, either you see yourself as eternal (*sassatāvāda*) or you think you are due for the chop any time (*ucchedavāda*). Our ideas of causality, in particular are geared to one or other of those assumptions, both of which Bauddhas reject.

Their idea was to get some perspective on these questions, to see them in context. The context was the way we all of us fill our lives from moment to moment, and can do so more or less helpfully. One thing we can usefully do is to try not to respond automatically, and so we pay attention to how we get tripped in to such automatic responses — the up-front reason to be interested in causal sequences is so as to be able to break the ones that can trap us.

2. THE FOURTH INDUSTRIAL REVOLUTION

2.1 Long-term Context: Science & Scientism

The Buddha-dharma emerged, with the Sāsana, when civilisation (also known as history) started to take off in a big way. People call that time the Axial Age[1].

1. Jaspers (1953). Eisenstadt (1986) Eisenstadt (2005)

In places, population densities increased sharply, and socio-economic systems became stratified, (and knowledge systems likewise) — cities developed, and writing. People used language more denotatively, and also more abstractly — so the world was now fuller of things and concepts than it was of beings. In that great economic boom, a certain materialism took hold, both philosophical and practical, and also a countervailing tendency towards abstract idealism.[2]

In the two-and-a-half millennia since, settlement patterns, social organisations, power structures, and so on have developed steadily — as has culture. Materialistic/idealistic thinking has been a recurrent theme.

In the last 500 years, human efforts to understand and control the physical environment have crossed a threshold. Culture has been dominated by science, society by industry.

Gradually, our species has been transformed. The complex of thinking, behaviour and institutional forms that many now refer to as STEM (Science, Technology, Engineering and Mathematics) has been important here, as has Economics. Computers have reinforced our resultant algorithmic bias.

There can be a place for all this. If, by making judicious measurements, we build data sets that we can analyse to identify regularities, then we can hypothesise causal connections, which we can test. In this way, we can find out what works, i.e., what happens if we do this or that, and so how to produce specific effects. We can, in effect, form *if…then* statements, masses of them, nested in complex ways[3]. Taken together, these can offer a valid description of the universe — a picture of the world, which is true inasmuch as it does reliably help us to manipulate elements of our physical environment.

Still, no picture gives a complete understanding of what it

2. See on. For Materialism, refer to the Sāmaññaphala-sutta and the Pāyāsi-sutta; for Idealism, the Upaniṣads etc.

3. This is, roughly, what philosophers of science call an instrumentalist view, as associated for instance with Pierre Duhem — see Duhem (1962). It seems to the present author eminently compatible with a Buddhist approach.

represents. Also, though mathematical modelling helps us to deal with the material world, it is less relevant, (and certainly not sufficient), when it comes to living our lives — to monitoring and modulating our behaviours, individually and in society.

That is a great truth. Unfortunately, since is quite unlike Newton's Laws of Motion, we tend to lose sight of it — to our detriment. All too easily, we get locked in to mechanistic, deterministic, alienated thinking, whereby I am as I am because of my DNA[4] and because of how the species evolved[5], and if I think I experience a particular quality of living (an 'emotion', say), then that is an illusion — two chemicals are just mingling in my brain.[6]

We deny and so cramp ourselves. Projecting our deterministic vision onto our material and social environment, we then create for ourselves a technical world which assumes that humans lack agency, and so ensures they will lack it. Finally, we take this to be the natural order of things.

This is a problem for us. It has been creeping up on us for ages.

Since the first stirrings of civilisation, the social and cultural change associated with what we now call science and technology has seen humans lose touch with experiential processes and become less capable of making wise choices spontaneously. This degeneration has accompanied the advances that we have made in short-term control over the physical environment — what from one angle is progress appears from another as regress. We are split, and that split is becoming ever more marked — it now threatens the survival of our species, indeed of the entire biosphere.

The trouble is, we have tried too hard. Europeans, for instance, had a struggle at first to motivate people to apply their blessed Scientific Method, so forced themselves to disregard all else. Now, across the globe, educated people repress the subjective dimension of lived reality — and, in so doing, we surrender much of our ability to mould our own lives.

4. See Dawkins (1976) and the memorable critique in Noble (2006)
5. See Wilson (1975)
6. See Crick (1994)

To develop our industrial and consumer society, we have abandoned those skills, (cognitive and physical, natural and conditioned, 'moral' and 'religious'), which, through earlier history, used to prevent us from harming ourselves — so we are hitting barriers. Externally, this appears in the ecological crisis. More fundamentally, we are discovering that there are limits to our psychological adaptability.

2.2 Short-term context: revolutions and singularities

Those steering our development are dimly aware of this, though rarely unwilling to acknowledge it openly. That may help explain why they are keen on the 4IR.

Ideologies of science, etc, have often encouraged élitist denials of what most people know as their humanity — but it is happening on a grand scale now. Humanity, as so far known, is officially no longer fit for purpose — incapable of adapting fast enough, we are now to be supplemented by quasi-human machines with Artificial Intelligence (AI). Indeed, we are to be transformed by continually closer and more intense interaction with these robots. That, in a nutshell, is the 4IR[7].

It seems to some to offer an escape. Perhaps we need no longer strain so hard to sustain our scientific-technical project — instead, we can transfer responsibility to the very machines that our efforts thus far have produced. Instead of struggling to adapt ourselves to the machine environment, we will now have the machines change us directly.

The first Industrial Revolution was no fun — 'dark, satanic mills' spread over the land, while malnourished children worked themselves into squalid, early graves. The second, which involved electricity, chemicals and production lines, proved still more disquieting — needing some distraction, humanity was prepared to do almost anything, so invented World War. The third, with its computers and internet, has offered many glittering baubles, but stories of increasing depression and dissociative disorders will not go away — and of how the smartphone/social-media combination

7. See on

saps our capacity for subjective experience.[8]

The global consumer society has seduced many people into living life as a series of multiple-choice tests/surveys. Now, however, that appears no longer to be enough — instead of seducing, it is now time to force people. Welcome to the 4IR.

Till now, our efforts to quantify social processes, to reduce them to a game we could score, have all involved some sort of interpersonal exchange. When a customer rings a call centre, or when Facebookers decide to cross-post their videos, humans are involved with one another — albeit distracted with their individual machine-environments, nonetheless they try somehow to communicate humanly. No longer — now, it is time for widespread, unmediated human-machine interaction. Or, perhaps that ought to be: machine-human interaction. Progressively, the machines are being programmed to take the initiative, so as to produce desired behaviour changes — changes in our, the users' behaviour. This is likely to put people under pressure in ways that no one may at first recognise, let alone understand.

As more and more of our lives unfold in the world of algorithmic eye-candy, we become more self-absorbed, bored and obsessive. At the macro level, our society fails to address glaring anomalies in finance, ecology and so on. It is as if some collective psychological crisis were brewing.

Hence the rhetoric of 'singularity'. Towards the turn of the millennium, well-known figures in IT began to wonder what evolution might hold for humans. Given our triumphal progress thus far, they expected something big — we would come to exist in some totally new sense, intellectual and abstract.

The 'hive mind' created by brains linked across the internet might somehow take on a life of its own. Or, with judicious use of genetics, AI, chip implantation, Virtual Reality (VR), and what have you, we might consciously direct our evolution so as to produce a new superhuman race. In any case, a dramatic evolutionary leap was in prospect — a 'singularity'.

8. See on

This naïve thinking was baked into Silicon Valley and remains remarkably influential. People have commented how it resembles the fundamentalist-Christian doctrine of the Rapture, whereby True Believers will suddenly be snatched into Heaven to prepare Christ's Second Coming.[9] It is interesting how the two belief-systems complement one another — just as the Bible-thumpers imagine Believers' bodies being snatched from their cars while they drive along, so techno-fundamentalists long for the day when their minds will be absorbed into some quasi-mechanical mental heaven in a similarly inexplicable way. Just as Believers will leave behind what used to be their minds, being instead filled with the Holy Spirit, so the nerd élite will no longer be encumbered with a body. This has something to do with the mind-body split, evidently.

2.3 Current developments

The expression 'Fourth Industrial Revolution' ("4IR") has been popularised by Klaus Schwab, a German economist who is the moving spirit behind the World Economic Forum.[10] It describes the

confluence of … artificial intelligence (AI), robotics, the internet of things (IoT), autonomous vehicles, 3D printing, nanotechnology, biotechnology, materials science, energy storage and quantum computing…"

This "revolution", we are told,

… entails nothing less than a transformation of humankind.

Professor Schwab says

… [the 4IR] is fundamentally changing the way we live, work, and relate to one another".[11]

That last formulation is striking. It attributes agency to an abstract entity. We are told this entity will change us fundamentally, and are invited to approve. It is almost a formula of worship.

Schwab would doubtless claim that this is a mere rhetorical appearance, and that in truth he is simply following the conventional

9. Lanier (2010)
10. held annually at Davos in Switzerland
11. Schwab (2016) p7

principle that we must adapt to our environment. Still, some barely explicit 'refinements' of that principle are in evidence here.

It is assumed that the environment changes with our developing technical capacities, so we have no choice but to go wherever the latest technical innovations may lead. The development of new techniques is seen as a process which goes by itself.

It is not subject to human choice — to the choice of those who do the developing, or of those who fund and direct it. This is how we come to understand ourselves as surrendering our human agency to an abstraction like the Fourth Industrial Revolution - for thinkers like Schwab, scientific understanding is beyond human discretion. It unfolds according to its own dynamic, and technology follows automatically.

There is some truth in this, of course. There is hype as well.

Top-flight researchers, doing original work, are often surprised at the results of their scientific enquiries - and, if so, they follow where the newly revealed facts lead. Yes - and, at the same time, most scientists work to orders from the funding agencies.

Those agencies may claim to allocate funds 'objectively', i.e. in line with a developing scientific consensus (which, again, is said to follow where the findings lead) - and this may even be true, sporadically. Often, though, the consensus reflects political processes in professional institutions, which in turn respond to external pressures from the wider political arena, above all from corporate interests. Even the best, most original researchers may be constrained — as when Barbara McClintock was prevented from continuing her work on 'jumping genes', work which 30 years later attracted a Nobel prize[12].

If even work we classify as pure science does not just follow the facts, then we can imagine how much less that is the case when scientific findings are applied in developing new technical devices and systems — commercial products. In discussions of the 4IR, this process, too, is assumed to be automatic, subject to human choices only peripherally — we have some scope to steer

12. Spangenburg, R and Moser. D.K.(2008)

the autonomous forces driving the revolution, and to compensate for some undesirable side-effects, but in the main we must simply submit to the logic of the market.

Like science, the economy is conceptualised as a force which follows its own inherent, inexorable laws, and moves us with it, willy-nilly - a monstrous divinity, effectively, which holds humanity in its maw. The 4IR, similarly, starts to look like a dark deity, potentially helpful yet threatening.

We have had a foretaste of what we can expect. The last gasp of the Third Industrial Revolution, we are told, was the simultaneous advent of the Smartphone and of 'social media'. There is evidence that this development has adversely affected the mental health of the generation who grew up since.

They lack a sense of sense of autonomy — well, fancy that! Going on from there, it seems that we are raising people less and less capable of intimacy, and hence of producing further generations, (a remarkable comment on the promise that social media would make it easier for like-minded folk to connect).[13] Progressive infantilisation seems the Order of the Day.

The problem thus revealed appears still more acute when we read that the 4IR is not just seen as an independent force, beyond human agency, but in fact, according to the prevailing view,

[n]ew ways of using technology to change behaviour… offer the potential for supporting …natural environments.[14]

Those steering this process evidently want us all to embrace change imposed by means of AI-driven quasi-autonomous, quasi-personal machines — in this way, they hope to make people accept reforms supposedly dictated by ecological imperatives.[15] (This has something in common with the drone story).

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13. See for instance *The Atlantic* magazine *passim* e.g. https://www.theatlantic.com/magazine/archive/2017/09/has-the-smartphone-destroyed-a-generation/534198/ https://www.theatlantic.com/technology/archive/2017/08/a-sitting-phone-gathers-brain-dross/535476/ https://www.theatlantic.com/technology/archive/2016/01/the-convenience-surveillance-tradeoff/423891/ and follow links

14. Schwab (2016) p 63 ff

15. Schwab (2016) It is necessary to piece his argument together carefullyhere.

The change in prospect is presented as non-discretionary, a historical given. All are urged to join the best minds in making it work. To make it work, we must first overcome our difficulties in accepting the pre-determined course of events, and then must channel the 4IR's capacity for re-engineering humanity in appropriate ways, managerially expedient ways. This programme generates tons of media output, like what surrounds the launch of a new electronic device only bigger.

Behind the brouhaha, what is really at issue? The current combination of AI high-profile product launches and intensive discourse management, (4IR in embryonic form, so to say), serves to lock us in to certain unstated assumptions:

- human life is
- a product of material factors, and hence
- determined by forces remote from our experience; and that
- those forces drive an evolutionary process;
- so our current social and economic arrangements approximate to the optimum — the status quo is the culmination of:
- human progress through civilisation,
- intellectual progress through science and
- material progress through technology/industry.

It is obvious that things are as they are because they have to be that way - and the same goes for us. *Ergo*, we are fated to experience what the 4IR has in store for us.

That is the story. Let us consider that in the light of Bauddha traditions - and consider how humanity could learn from this episode.

Would we then be better able to address the deterministic ideology which holds us all in thrall? If we try to follow and emulate Bauddha thinking, could we even undercut it entirely?

3. WHAT CAN WE GET FROM THE TIPIṬAKA?

3.1 General reflections

3.1.1 Traditional resources

The ideology of techno-determinism masks patterns of economic and political power. That helps to explain why the 4IR is presented as fact, something outside ourselves, to which we must react. Still, that problem is in a sense secondary.

It is true that people manipulate and exploit each other, and civilisation encourages it. Equally, survival is a stronger imperative than any — and, as human civilisation reaches this flexing-point, we are all in many ways similarly confused about how to want to survive. That goes for exploited and exploiters alike.

The 4IR is a social/political/economic project, subject to human agency, which serves particular interests and reflects specific attitudes and assumptions. At the same time, many of the relevant assumptions are deeply embedded in everyone's thinking — they are common to all sorts of people.

It is useful to notice those assumptions, and, where necessary, to pick them apart. Bauddha traditions offer resources we can use in so doing.

3.1.2 Linguistic

In responding to the challenges of civilisation, Bauddhas have focused on states of mind. This has led to a concern with language, and how it can misguide us.

Language usage shapes the way we think, and the way we experience our lives. It often encourages us to divide reality into discrete entities, things and people with essential characteristics which (we assume) cohere and persist and can be relied upon. The archetypal entity is 'me' — I think of myself as permanent, fixed, irreducible, a given, a unique feature of the world, a landmark to steer by. Other entities then seem to follow the same model.

If we have a name for something, we suppose it must exist in this substantial way. Bauddhas were among the first in history to suggest that this might be a problem (Lao-tzu and his people may be compared).

Have all people at all times been subject to these same

compulsions? Perhaps not exactly. Consider those who lived a few hundred years *before* the Buddha's time — they may not have been so focused on fixed entities.

That is at least plausible in view of what we know of their language usage. We have oral records from the Indo-Aryan speech-community of that time. It comes to us in the Vedic verses.

Vedic language compares strikingly that of the Pali canon. It favours verbal forms, and it is overtly polysemic — allusive and associative, poetic and symbolic. By the time of the Pali, conventions of language usage had evidently changed, and become less fanciful — substantival constructions, unfamiliar from the earlier period, are common, and the language is generally much more clear-cut and denotative. Binary categorisations are more in evidence.

It makes sense. The Vedic peoples led a more mobile, extempore life, herding and foraging, but Magadha/Kosala in the Buddha's time was becoming more settled and organised. They were using metals to clear forests and irrigate valleys, so output exploded, with population not far behind — and state structures and administrative systems were of course developing too. People were focused on manipulating their material and social environment to gain wealth. Substantial economic advances went along with a substantialist metaphysic, reflected in substantival language and thought processes.

This was the situation Gotama was addressing. Language was less and less well adapted to non-material human needs.

In that context, some wanted to reject the practical idiom of everyday contemporary life and to cleave instead to those magical Vedic verses. The Bauddhas understood that those people were deceiving themselves, for that magic was gone — whatever it may once have been, it was now just an idea.

The only thing left, it seemed to them, was to say what you can. Say what you can — and no more. Significant silences convey much that is important.

3.1.3 Civilisation, materialism and practical discourse

In some ways, people of Gotama's time had it easy compared

with their Vedic predecessors,. Civilisation was thriving in the early-historical Ganges valley.

There was a cost, though. Their language reveals a world of things rather than of forces, entities rather than processes, fixed ties rather than fluid associations — a world of determinate, quasi-mechanical relationships rather than of interactive, negotiated, quasi-personal relations.

Then as now, clearly, many felt that reality is out there. It follows its own rules, independent of us - and it governs our lives, so our role is to fit in, to pursue self-interest modestly as best we can.

Then as now, this thinking evoked mixed reactions. People went with it on a practical level, almost out of necessity no doubt - populations of such density could sustain themselves only if everyone followed the programme, so techno-economic development was clearly top priority. At the same time, the market for psychotherapy, spiritual sustenance or what have you was booming - so we may deduce that, as today, people were feeling the strain.

It all seems weirdly 'modern'. The Ājīvikas and others reflect a strong climate of determinist thinking. The protagonist of the Pāyāsi Suttanta is a caricatural, hard-line materialist - if reincarnated in contemporary California, once can imagine him as a strong promoter of the 4IR[16].

To preserve productivity and consumer gains, the general idea was to keep civilisation progressing - and that meant minimising individual and collective mental disorder, and coping with what could not be minimised. That in turn meant developing new patterns of thought and behaviour, and new framework-stories, new ways to speak and to think about the context of human life.

In the public discourse, two poles emerged. We see them in India.

There are theorists and practitioners of power who are recognisably materialist.[17] Then we also see idealists - abstract/ speculative thinkers in a Vedāntic style.

16. Pāyāsi sutta Dīgha Nikāya 23 See Note 27

17. Lokāyatas and carvākas were theorists, and among practitioners of power we can cite Pāyāsi and the courtly readership for whom the Arthaśāstra was composed.

The Bauddhas claimed a middle ground. Closely considered, their aim was, actually, to undermine the whole discourse.

3.1.4 Practical anti-binarism

The Middle Way (*majjhima-paṭipadā)* appears in the Dhammacakkappavattana Sutta, traditionally the Buddha's first teaching. The Buddha recommends avoiding extremes of sensual indulgence and self-mortification[18].

That is the context for other usages, for instance in relation to *uccheda* and *sassatā*. It is not about how you understand the world - it is about how you handle yourself.

It is true that there are theoretical aspects to these teachings. Yes, the Bauddhas want to say that continuity, for instance between one life and another, does not imply an entity that continues, and that is quite a theoretical point - and, at the same time, in practice the key is not to get too puffed up or brought down. Sometimes, your life will suggest to you that the world is for your eternal benefit, sometimes that there is nothing worth relying on - and neither impulse helps. If drawn too far towards one pattern of thinking, you may perhaps entertain the other so as to steer back towards the middle.

Effectively, in every contrast like that between materialism and idealism, both alternatives are rejected. So is the choice between them - neither option applies, and to select is meaningless.[19] Anyhow, it is a question of practice, not of philosophy. It is not so much that some arguments are right and others wrong - it is more that some ways of thinking help us stay in a good place in our minds. It is worth avoiding conceptual habits which pull us in directions where we do not properly want to go - and developing more helpful habits instead.

This basic Bauddha approach applies widely. It extends to all binary contrasts.[20]

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18. Saṃyutta Nikāya 56:11 (in the Sacca Saṃyutta)

19. The only thing to say at this point would be the logic-defying *catuṣkoṭi* — 'it is neither so nor is it not-so, nor is it both-so-and-not-so, nor neither-so-not-not-so'. The same would apply to all too-simple binary choices — determinism *versus* randomness, for instance (order *versus* chaos).

20. The understanding of vedanā presented in e.g. the Satipaṭṭhāṇa Sutta, for instance,

Often, our language almost forces us to think in terms of a two-state logic, and this sets up tensions, (which may be partially resolved by taking sides, but only at the cost of sinking further into the binary trap). It is not helpful to assume that, in a debate, one side must be right and the other wrong. When it comes to what matters, neither 'eternalists' nor 'annihilationists' are 'right' - and the point is not to argue correctly, it is to live life so we learn from it.

That is not something we can readily pin down in referential, denotative language. It is, if you like, a qualitative standard that, implicitly, everyone is aware of, and tries to apply. We might call it dharmic.

3.1.5 Anti determinism

The problem of deterministic thinking is connected. If everything is determined by external, material forces then at some point those forces must cease to apply, so we think of annihilation.

añño karoti, añño patisaṃvedīyatīti ...
paraṃ kataṃ dukkhan ti.

Iti vādaṃ
ucchedam etam pareti[21]

One (being) acts and another experiences (the consequences) ...
Suffering is produced by someone other (than the sufferer).

If we put it that way,
it is the same as (believing in) annihilation.

This suggests why deterministic thinking attracts us. It offers an excuse for the lack of confidence that leaves us alienated from our own lives, unable actively to live our own momentary experience. It does not matter what we do, we tell ourselves — nothing can change (my suffering). This would seem to reflect a social world in which people feel a lack of control over their lives.

3.2 Buddhist Causation

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centres round a basic like/dislike contrast, although a third position is then added, indifference

21. S 2 20 Kalupahana (1975) p 43

3.2.1 Connectivity

The S 2.25, we read:

> Uppādā vā tathāgatānam
> anuppādā vā tathāgatānam
> thitā va sā dhātu
> dhammatthitatā dhammaniyāmatā idappaccayatā

Kalupahana comments[22]

[T]here are no accidental occurrences; everything in the world is causally conditioned or produced

Certainly this passage suggests that our experiences are not isolated, but instead are all intimately connected in complex ways. That is not precisely what it is talking about, though. It focuses instead on *dhammas*.

Dhamma is a complex term. One important usage is in the Satipaṭṭāṇa Sutta[23], which outlines four stages in a key meditative practice called *sati*. *Dhammas* are what the meditator focuses on in the fourth stage.

So it hardly seems likely that we are not dealing here with causality in any straightforward sense. In the Pali literature, for instance, the basic metaphors for connectivity are organic

Just as a seed that, when sown in a field, will grow if it is supplied with the essence of the earth and moisture, so that [five] aggregates, the [eighteen] elements and the six senses come into being on account of a cause and disappear when that cause is destroyed.[24]

'Cause' is the accepted rendering of the Pali here — and yet earth and moisture are not necessarily what we might ordinarily think of as causes for the growth of a seed. They are conditions under which the other causes operates, which arise from the molecular and cellular structuring and functionality.

One point we might take from this is that mechanical, 'billiard-ball' causality is a special case. Then there is the wider category

22. Kalupahana (1975) p 89
23. M A 19
24. S 1.134 hetum paṭicca sambhūtā hetubhaṅgā nirujjhare

of causal-or-conditional connectivity to which that special case belongs.

3.2.2 Chains of origination

Consider next the classic formulation:

Imasmiṃ sati
idaṃ hoti,

imassa uppādā
idaṃ uppajjati.

Imasmiṃ asati
idaṃ na hoti,

imassa nirodhā
idaṃ nirujjhati[25].

'This being so, that happens', it say - events are chained. What does that imply?

Does it imply 'closed-system' thinking - was the Buddha concerned with situations where, 'all else being equal', a single input variable can be seen as responsible for changing a single target variable? No, that is clearly not the sort of causal analysis that the Bauddhas were offering.

Where the scientific impulse is to isolate specific causes, the Bauddhas look at how influences pile up, as when *bhikkhuni* Selā says that the body grows only if a whole pattern of causal factors are in play at the same time - so you cannot straightforwardly put it down to the way bodies are in themselves, nor to remote actors or forces.[26]

The overriding Bauddha project was that people should be able to follow the subtle movements of their own minds (so as not to get carried away). A causal connection in this context would be if a certain cognitive behaviour tends to induce unhelpful experiences. Understanding it will help you to avoid falling into that behaviour - if you notice when that behaviour is starting, then you will not get trapped in it. The point, therefore, is not to anatomise how

25. M 1 .262-64; S 2.28, 70, 96; Ud,, p. 2.
26. S 1.134

such-and-such a behaviour may produce its effects, just to avoid behaviours unlikely to be helpful.

So the classic *imasmiṃ sati* formula can be understood without any causal connotations:

Whilst this is in existence,
that comes into being

After this has emerged,
that emerges

For as long as this is in not existence,
that does not come into being

After this has broken up,
that breaks up

Yet it is commonly seen as an example of advanced, causal thinking. Kalupahana is typical here.

Consider his comment on the Saṁyutta text which says:

Avijjāpaccayā bhikkhave sankhārā.

Iti kho bhikkhave
yā tatra tathatā,
avitathatā anaññathatā idappaccayatā,
ayam vuccati bhikkhave paticcasamuppādo

He says

Causality or causation (paticcasamuppada), as described in the Samyukta, is synonymous with the causal nexus, for example, as between 'ignorance' (avijjā) and 'dispositions' (saṅkhāra). This causal nexus is said to have four main characteristics,
(1) 'objectivity' (tathatā),
(2) 'necessity' (avitathatā),
(3) 'invariability' (anaññathatā,), and
(4) 'conditionality' (idappaccayatā).[27]

Is the Buddha here talking of causality in a modern sense? Is he even presenting an analysis of the world? Or is he offering tips for

27. S2.26 Kalupahana (1975) p 91

how to handle our human attitudes and expectations? Another way to take this passage would be:

Our dispositions (all) go back to the way we lose our understanding (of what is happening with us). That is what we call conditioned origination — it happens that way, it doesn't happen differently, and nothing else happens.

This would hardly seem to be about abstract causality.

Yet the scientific method was alive and well in the Magadha/Kosala of those days - the Pāyāsi sutta describes an impeccably Popperian test of whether any non-material vital spark (*jīva*) exists in a human.[28] This was an increasingly administered and technically progressive society, so mechanistic models of causation were all the rage - they even invaded the sphere of psychology/philosophy/religion, as we see in the Sāmaññaphala sutta, where the doctrines of the various teachers cited focus quite closely on ideas of straight-line causation. Some accept it - others reject it. Some say strict causal laws determine what happens to us, and how we react - for others, however well or badly people behave it has no influence on how well they get on.

In the middle, the Bauddhas resist false dichotomies For them, material/mechanical patterns of causation are all very well, but not so important. What matters, they suggest, is the causal understanding that can help a person to live life more fully, moment to moment.

It is one thing to achieve instrumental control over external circumstances. It is another to develop psychological resilience by weighing your states of mind in full awareness of how they have developed

You look at what is there. It happens that way (*tathatā*), so why kick against it, complaining it is random or rigged? Instead, we can look at how it happens (*avitathatā anaññathatā*) — and, in particular, at what purchase we may have on it.

28. Pāyāsi sutta Dīgha Nikāya 23

CONCLUSION

The point of causal chains, in a Bauddha perspective, is to *break* them. A cause is not a distinct, measurable input to the system, such as may be applied so as to produce a specific output. Instead, it is a combination of factors, not measurable but otherwise available to experience, which a person can watch out for, and can *counteract*.

The teachings constantly come back to the same point - humans have agency, if they can only think straight. Unafraid to be accused of circular argument, the Buddha also explicitly justifies his approach precisely on that basis - we know this must be right because it leaves scope for human agency[29].

Now, we face a powerful, global movement to fill our lives with robots and robotic thinking (4IR). How do we understand this?

First, let us think of the people running this campaign. They had a dream, but it is not working, so now they push too hard.

Business-friendly technocracy was supposed to the magic formula. Suddenly, the formula does not work anymore. What do they do, the technocrats and their business friends? They get scared and try too hard - there is an edge of desperation in this 4IR story.

The big money has spoken, so something will happen - but no one knows how the story will develop. People may be talking of the 4IR for some time, alas - freighting this construct down with all sorts of meanings.

What sort of problem are we dealing with here? People are getting too closely focused on an obsessive, decontextualized understanding of cultural, social, and economic processes.

The context they lack is, if you like, practice. Or, if you like, it is how we all struggle to get by, to cope with boredom, exhaustion, demons or even undeserved good luck. Or, it is the understanding that the perfect plan is no good unless people will go along with it.

The causes-and-connections that matter are those that describe and affect how people actually behave, whatever their stated rationale. Lived realities matter - more than abstract analyses.

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29. *A* 1.174; cited Kalupahana p 22

The causes and connections that matter most of all are those that trip you up - the ones you can break. There may be work to do, though, to break them.

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