

# Circular Perspectives for Linear Mindsets

Delve into the logic of innovative thinkers from four corners of the globe

**How did linear thinking succeed in dominating our mental infrastructure? What can be done to change the linear mind-set of corporate and political leaders, and what should consumers do if they want to move away from linear products, culture and lifestyles? REVOLVE Circular spoke with four innovative thinkers to find out.**

**Ashish Kothari** is the creator and main proponent of the concept of Ecological Swaraj in India, also called Radical Ecological Democracy. In our interview, Ashish Kothari particularly points out the pluriverse of alternatives to 'development' that are either part of ancient systems of living in harmony with the earth, or new innovations including from within industrialized, Western societies.

**Doryn Negesa** is a Ugandan Doctoral Researcher at Tsinghua University in Beijing, China. Her focus is on the sustainable development of eco-industrial parks in Africa. She believes that sustainability and a circular economy are the key to redefining Africa's economic development.

**Kyle Ritchie** is the Founder of the Circular Economy Studio and the Education Sustainable Design Lead for Cannon Design in Chicago; he is best known for his new book *Circular Economy for Dummies* to be published in April 2021.

**Walter R. Stahel** is a Swiss architect and author of *The Performance Economy*; he has been influential in developing the field of sustainability, by advocating 'service-life extension of goods - reuse, repair, remanufacture, upgrade technologically' philosophies as they apply to industrialized economies.

**“The problem with the linear economy is it accepts the false premise that ‘waste’ – or a valueless object with no future potential to provide a service – is a real thing.”**

**Please allow us to start with a big question, or rather two: What is wrong with the linear economy? Since when?**

**Ashish Kothari:**

Since colonial times, or more precisely post-WWII, the predominance of classical and then neo-liberal economics has classified the entire world in linear fashion. 'Developing' and 'developed,' traditional and modern, primary-secondary-tertiary sectors, and so on, have become not only classifications but also normative directions in which to move. This approach, originating in the North/West, cleverly disguised the real aim of gaining worldwide control to enable American and European economies to revive from the ruins of the war, by convincing other countries and regions that they all have to follow in their footsteps, and that they will generously aid in this process.

The categorization is also based on highly reductionist ways of thinking, e.g. defining 'developing' and 'developed' based on simplistic criteria such as GDP, or size of the economy measured in predominantly financial terms. This means that highly sophisticated ways of thinking, knowing, doing, and being that have characterized other regions of the world were considered 'backward', to be replaced by modernist, 'scientific' epistemologies, and ontologies. Communitarian ways of life focused on the commons were to be replaced by individualistic, privatized systems, and integrated material-spiritual-cultural ways of life by a separation amongst these.

**Doryn Negesa:**

The linear economy undermines biodiversity. There is a take-make-dispose mentality where the linear economy assumes a constant supply of natural resources. The linear way fuels a culture of excessive consumption and creates more waste than is sustainable in the long-term. The biggest problem with the linear economy is on ecology and the economy; the ecological downside is that the production of goods is at the expense of the sustainability of the ecosystem, and the economic downside is on the prices of raw materials as they fluctuate due to scarce materials and geopolitical dependence on different materials.

**“The majority of people alive today were born into a world where ‘waste’ was as normal as air, water and color TV.”**

**Kyle Ritchie:**

The problem with the linear economy is it accepts the false premise that 'waste' – or a valueless object with no future potential to provide a service – is a real thing. But it's not. To industrialized societies, waste is an inevitable reality for material lifecycles and a necessary tool to drive economic growth. By looking at the natural world we rely on, however, we clearly see there are no observable instances of "waste" occurring naturally – aside from heat, really. In this absence of waste, what do we see? Abundance, resilience, and environmental systems so complex even the smartest humans couldn't replicate them.

**Walter R. Stahel**

The linear industrial economy started with the industrial revolution. Before that, a majority of people lived in a forced circular economy of scarcity and poverty.

Industrial mass production of almost anything enabled societies to gradually overcome scarcities of food, shelter and clothing. Manufacturers only optimize production flows up to the point of sale, where both ownership and liability of objects are transferred to the buyer, who passes the responsibility for derelict objects and 'waste' to the municipality. Economically, manufacturers internalize profits and externalize the cost of risks

during the use of objects to the buyer, and end-of-life costs to the taxpayer. This linear system from mines to the point-of-sale and on to landfills was tolerable until 1945 because 'waste' either had a value and was collected or was disposed of in Nature which slowly absorbed it.

After 1945, the scientific progress enabled humankind to manufacture objects made of synthetic materials, which were outside nature's absorption capacity, both quantitatively and qualitatively. Derelict objects were still collected by municipalities and treated by recyclers or incinerated, but substantial numbers ended up in the environment.

Framework conditions push recyclers to eliminate waste instead of incentivizing them to preserve the value of objects and materials. And despite increasing environmental impairment, politics continue to support the linear economy.

## Has linear thinking succeeded in dominating our mental infrastructure? If yes, then how?

### Ashish Kothari:

In the last 75-80 years since 'development' got defined in the above way, it has been planted in people's minds across the world with a clever mix of financial incentives and arm-twisting by structures such as the Bretton Woods institutions, as also cultural messaging about what is the 'good life'.

Linear 'development' is also subtly equated to the unfolding of the baby in the womb into a full human adult, or of the progression of a seed into a tree; biological evolution is equated to the evolution of societies from developing to developed. Virtually all countries have imbibed these, and their own elites have pushed them into school textbooks, economic plans, political manifestos and the like. Even as such approaches to the economy have created enormous inequalities and ecological devastation, a vast number of people still remain convinced that they need 'development,' and that even if they are not benefiting right now, one day they too will reach the levels of economic wealth and comforts that the rich are enjoying.

### Doryn Negesa:

I do not think so. If it had indeed succeeded, we would not be veering toward the circular economy. It is something that had initially been rooted but is now being replaced by transformed thinking through the transition to circular economy.

### Kyle Ritchie:

The majority of people alive today were born into a world where 'waste' was as normal as air, water and color TV. So yes, without a doubt, the linear economy has completely dominated the way we mentally see and make sense of the world, as it has been an accepted facet of our lives since day #1. Which is why an alternative has never really been considered, either.

### Walter R. Stahel

Our mental infrastructure is determined by culture and religion, education, experience and incentives

Politicians are acting in 4-year cycles until the next elections, a timeline incompatible with a vision. Corporate leaders have a short shelf-life of about 3 years, industrial companies of about 40 years. Keynes said that in the longer term we are all dead. Linear and short-termism go hand-in-hand.

Humankind's linear thinking may prevent our mental infrastructure to distinguish between Nature's circularity which remains steady – the water cycle, the tides, the seasons, fauna and flora – and anthropogenic interference like greenhouse gas emissions causing irreversible changes to the global climate. Humankind's drive to permanently grow and improve based on science and short-term linear technical progress, witness plastic and fossil fuels, clashes with Nature's development by evolution through selection. A different societal development following the Native Americans' motto 'In all your endeavors consider the impact on the next seven generations' could bring our linear thinking more in line with Nature.

1. Dignified livelihoods - Damabhai & Balabhai Marwada, continuing dying craft of kharad carpet weaving, Khavda, Kachchh. Photo: Ashish Kothari



## For change to happen, who needs to educate our political and corporate leaders, and on what? Or is it the consumers who need to change first?

### Ashish Kothari:

The most effective strategy to challenge the linear mindset is to enable the mobilization of marginalized peoples, communities and individuals who have been negatively impacted or 'left behind' by the dominant 'development' model, and who can powerfully resist it; secondly, by enabling communities and people who are demonstrating alternative approaches that meet human needs and aspirations without causing the kind of ecological damage, inequality, and deprivation that such development engenders.

Exposing the power and profit games behind the currently dominant production system (capitalist or statist), has to be part of this. So too, exposing the underlying structures and relations of patriarchy, racism, casteism; and human-centeredness vis-à-vis the rest of nature.

### Doryn Negesa:

A systematic change has to happen. Firstly, a change in the education system where the students are taught and prepared to solve problems that may occur in the circular economy model. Secondly, established researchers and experts in circular economy can educate the political and corporate

leaders on the importance of the circular economy. Of course, all countries have different priorities in terms of development so they each have to tackle this according to the situation of the country. For example, in Uganda, we have a group of climate leaders that educate the communities through different initiatives like doing clean-ups and plastic waste audits. They believe that to enact a change, they must use their voices as weapons towards advancing the fight against not only climate change, but also the 'take-make-dispose' mentality. This is how change starts, with small steps in the right direction.

**“If we could solely rely on the individuals of this world to shape a brighter future, we wouldn't still be utilizing Styrofoam to keep our \$1 coffee hot...”**

### Kyle Ritchie:

It is important to acknowledge a pretty simple truth: we cannot rely on individuals to make the 'right' purchasing practices and change their buying behavior without a proper incentive in place. This isn't to say humans are inherently bad and selfish; I'm simply saying if we could solely rely on the individuals of this world to shape a brighter future, we wouldn't still be utilizing Styrofoam to keep our \$1 coffee hot, despite knowing how detrimental it is as a material. From that platform of understanding then, we can accept that the structures of our society must change to incentivize individuals to make better decisions and support the circular management of products and

materials. Only political and corporate leaders hold the potential to adjust the transition from linear to circular by providing incentives to the individual.

### Walter R. Stahel

For change to happen, society needs a vision of the future as well as safety barriers on the road to the future, such as the 7th Generation Principle. In the past, science often provided visions, religions the safety barriers. But today religion has often lost its clout, and the belief in scientists and science is dwindling or under heavy attack from fake news and conspiracy theories.

For change to happen, it needs to be rooted in local culture. The objective of zero-waste motivates Japanese managers because waste is inefficiency; US managers, however, respond to money and can best be motivated by the objective of 100% yield, high profits, bonuses and efficiency.

For durable consumer goods, the owners of objects have always been in command; they determine the service-life of their belongings. For change to happen, education and motivation to turn consumers into users developing 'teddy bear' relationships with objects is a potential avenue.





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instead of discarding them as waste maintains the value of the elements that are still functional.

5. Repurpose: Upcycle or downcycle materials at the end of their useful life to maintain the energy and value embodied within them.

6. Recover: Trillions of dollars' worth of materials are sitting in landfills and floating in the oceans around the world. Remediation can act as a form of material recovery.

### Is there hope to be had? What kind of “good systemic change” is already underway? Who does it, and how can it be replicated?

#### Ashish Kothari:

Across the world communities and collectives have come up with a range of positive responses to the crises, alternatives to ‘development’ that are either part of ancient systems of living in harmony with the earth, or new innovations including from within industrialized, western societies. But it is the Global South - not its governments, but its people! - that is taking a lead in integrating ecological wisdom and resilience with economic democracy and social justice, building on traditions of working within and with nature, sophisticated knowledge systems that go back a few millennia, and community ways of doing things – complementing these with the best of what is emerging from new technologies or ideologies.

2. Traditional knowledge into the future - Dalit farmer Nadimidoddi Vinodamma with millets, southern India. Photo: Ashish Kothari

### Why is the predominant ‘reduce-reuse-recycle’ narrative towards a circular economy not enough? Or is it?

#### Ashish Kothari:

While changes in consumer behavior are a crucial part of the solution, especially in the case of elite/rich consumers, this will not by itself be enough. Systems of production, trade and exchange, ownership, and the ideologies underlying them, have to be transformed.

The ‘reduce-reuse-recycle’ or ‘circular economy’ kind of narratives do not necessarily challenge the structures of inequality and unsustainability as listed above, and indeed mega-corporations and powerful states can all claim to be doing RRR. These narratives are easily co-opted by these structures. More systemic transformations are needed.

#### Doryn Negesa:

The ‘reduce-reuse-recycle’ narrative is indeed not enough. To achieve a regenerative system, we have to design out waste and pollution, keep products

and materials in use, and regenerate natural systems by returning nutrients to the soil to regenerate agriculture leading to enhancement of natural systems.

#### Kyle Ritchie:

The ‘reduce-reuse-recycle’ narrative has certainly been a beneficial mantra to etch into the minds of many as a mainstream concept, but these steps alone don’t fully address the full scope of efforts required to institute a circular economy. So what’s missing? In order of priority:

1. Refuse: Do not purchase products from companies that do not support a transition to circular via their own material and/or product lifecycles.
2. Rethink: Consider how products’ designs can be improved to incentivize the transition from linear to circular.
3. Repair: Give users the opportunity to affordably (and most importantly conveniently) repair their broken products, rather than throw them away and buy new.
4. Refurbish: Multiple functional elements from multiple faulty products can be merged to form a functional ‘like-new’ product. Refurbishing products,

These alternatives range from practices like agroecology (itself extremely diverse), water/food/energy sovereignty using decentralized approaches, direct or radical democracy, sustainable settlements, struggles for equality of genders, sexualities, identities, movements for consumer rights, to the re-assertion of ancient worldviews like *sumac kawsay*, *buen vivir*, *ubuntu*, *swaraj* and the emergence of new ones like ecofeminism, degrowth, and conviviality. In India some of us are promoting the idea of eco-swaraj, or radical ecological democracy, which entails such fundamental transformations.

#### Doryn Negesa:

There is hope as we can see the concepts working in different countries. Take China for example. they, along with Japan, are the pioneers of circular economy in Asia. China, in order to tackle issues of supply security of primary resources and the related environmental impact of rising material demand, implemented policies through its reform plans (the circular economy promotion law by the national people’s congress of China, 2008). The adoption of this promotion law made China a frontrunner in circular economy legislation. They have transformed industrial parks to become eco-industrial parks that embed reduce, reuse and recycle into the whole production processes, they have developed the recycling industry and most importantly, there is a green consumption to guide citizens towards healthy consumption. It is not so easy to replicate their model as different countries have different bodies of authority but some of the policies and plans can be emulated.

#### Kyle Ritchie:

There is always urgency tied to minimizing anthropogenic climate change. Some of the Climate Action Initiatives outlined by United Nations Framework Convention on Climate Change (UNFCCC) – ‘Momentum For Change,’

“A vast number of people still remain convinced that they need ‘development’...”

‘Climate Neutral Now,’ and ‘Race to Zero’ – in addition to the overarching message from the world’s scientific community that globally, we must limit global warming to well below 2°C, preferably to 1.5°C to avoid catastrophe, all suggest urgency. While it often seems hopeless, I do not believe it is as I continue to see promising developments taking place around the world, focusing on making the circular economy an engrained structure of human life. My new book, *Circular Economy for Dummies*, features some institutions that are making a massive impact.

#### Walter R. Stahel

Circular Economy is regional and cultural, many environmental problems are global. In the North, societies of abundance need to reduce consumption by a factor of 10 (90%), to enable industrializing countries in The South to build their asset base of infrastructure in education and health, telecommunication and transport, necessary to fulfil basic needs.

Systemic change is underway: In circular societies of the northern hemisphere, hundreds of repair cafés in Europe bring together broken objects with retired craftsmen. The concept of intelligent decentralization in food production and through robots and 3D printing in industrial applications is rapidly progressing.

Universities worldwide develop ‘circular sciences,’ such as reusable polymers and metal alloys, and applications of circular energy in the form of green hydrogen burnt in fuel cells for mobility and heating applications. Used in Japan for over 20 years, circular energy is now also put into practice in Europe.

Nevertheless, challenges remain: How can societies move from a circular economy of scarcity to one of abundance without going through consumer society in less developed regions? How can the electro-mechanical knowledge and skill base necessary to repair and maintain existing assets be preserved in industrialized countries? How can politicians be convinced to support a circular industrial economy respecting the limits of nature’s regeneration and absorption capacity? How can policymakers ‘give waste a value’ and legislate a full producer liability internalizing all life-cycle costs? ●

The four complete interviews are available at [www.revolve.media/circular](http://www.revolve.media/circular)