

The Need for a Dynamic Approach to Economics

Dennis Venter

Abstract

Neoclassical Economics is criticized for being incompatible with the dynamic type of economic coordination that happens in the real world and for treating economics as isolated from it. Its focus is limited to what its accepted methodology can measure while all else is deemed constant or exogenous. It is in this need for a new approach to economics that this paper finds its aim. The development of the aforementioned economic coordination is outlined by considering an expanded version of the history of economic thought, starting with nomadic society and including experiences beyond the western narrative. To highlight the dynamics in this development of thought it is mapped against a *Spiral Dynamics* inspired framework and further analysed with *Integral Theory's Four-Quadrants*. This allows the identification of three specific variables which evolve and interact to drive dynamic change in any economy. The variables are defined as perspective (*i*), environment (*P*) and needs (*N*). *Affordance Theory* is applied to further explain how the three interact: In our environment (*P*), affordances are said to represent latent possibilities independent of the individual's ability to recognize them, they become active given the "physical capabilities of the actors... their goals, beliefs and past experiences". Similarly, needs (*N*) in a hierarchy implies that they are latent in the human psyche where the satisfaction of one need affects a change in perspective which is an activation of the next need. The conclusion brings the three variables together into a new definition of economics in the form of a function $E=f(NP)$. This paper thus expands basic economic concepts by grounding them in ecology and psychology, making these concepts compatible with the dynamic economic coordination of the real world. With this our focus turns to three well defined autonomous variables responsible for change instead of transitory phenomena resulting from change.

1. Introduction

The argument that Neoclassical Economics is not compatible with the world today basically goes that the real world is open and dynamic, and that Neoclassical Economics is simply not a good description of the stakeholders in the economy and how they think and interact in this open dynamic world. (Williams & McNeill 2005)

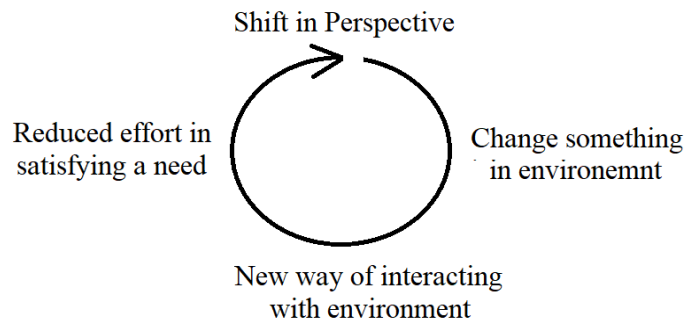
This paper firstly outlines what these dynamics are and secondly provides a theory of how these dynamics interact. The first is achieved by considering a broader version of the history of economic thought and making sense of this by mapping it against a *Spiral Dynamics* style framework (Beck & Cowan 1996). The second is achieved by investigating it with the *Four-Quadrants* model of *Integral Theory* (Wilber 1996). The result reveals that three variables (*N,P,i*) are responsible for the dynamic way that agents such as firms, consumers, governments, etc coordinate their interactions. The interaction between the variables is further described against *Affordance Theory* (Gibson 1979). Finally, the three variables are brought together in a

new definition of economics stated as a function after which some possibilities for future research are presented.

2. What are these dynamics?

Instead of starting with a static view or with narrow limiting assumptions as in the case of Neoclassical Economics (OECD 2019), the dynamic approach to economics starts with the idea that our world, our institutions, people, cultures, etc are subject to change and shifts. To aid in outlining this dynamic economic coordination we can turn to the history of economic thought, however, this history is still limited in two ways, firstly it excludes everything that happened before the writings of ancient Greek philosophers, and secondly, it does not fully represent experiences beyond the western one. The first limit is overcome by realising that economic coordination started as early as human perspective shifted in a way which inspired an individual to change something in the environment, where the environment then provided a new way of satisfying a need and new possibilities. This alteration reduces future effort in satisfying a need, for example making a tool or coding an app where the tool or app makes life easier. As soon as this cycle is present, economic analysis is possible (See Figure 1). The second limit is overcome by including thought from other parts of the world.

Figure 1: The economic cycle



This rich and complex history can be placed into perspective in a way that both categorises it in a meaningful way and also reveals why the history has taken the path that it did. One way to provide this perspective is with the Spiral Dynamics Framework (Beck & Cowan 1996). It is a model of human development and collective progress through different value systems, based on Cyclical Emergent Theory (Graves 1970) and Memetics (Dawkins 1976). It is thus useful in exposing and making sense of the dynamics in how individuals think and act and how it relates to collective change. It is also convenient because unlike the history of economic thought, Spiral Dynamics starts with nomadic societies which is when the economic cycle became present.

Nomadic Society: Members of such societies only knew basic needs. The concept of *goods and services* as we know it didn't yet exist, there were only social interactions with others and the basic things that nature provided autonomously and freely. They lived in harmony with the world, valued equality and sharing, and this culture and goals were an important part of their 'economic' systems. Lots remained undiscovered (like electricity), and the possibilities that it

would afford and changes it would bring but they didn't have a pressing need for it because they were unaware. (Sahlins 1972). After they found ways to alter their environment to satisfy their needs easier, the new environment led to new needs and their view of the world and their own possibilities changed (refer to Figure 1). Which brought us to the next stage.

Empires and early nation states: All over the world, private ownership became more common, sharing less common, and empires expanded. Autonomous supply by nature became dependent on agriculture, trade and expansion of the empire. A need for power gained prominence. Here society typically gets divided between those who own land and those who work on it. Religious teachings or a type of 'righteousness' becomes popular which is usually part of the state and plays an important part in producing the first economists doubling as philosophical or religious thinkers (de Roover 1958). Spiral Dynamics sees religion as something that pulls people and societies out of the exploitative mindset that runs rife in empires and gang stricken areas of today's world, providing context to the growth of the Catholic church in Rio.

Industrialisation: Enlightenment brought an end to the dark ages and industrialisation changed the rules again. A new 'platform', companies, commoditised things into 'goods and services', marketed it to create a need, and supplied it to those who have adequate 'effective demand'. We see a range of neoclassical concepts applicable to this new period. (Smith 1776)(Keynes 1937). The perspective was work and earn money, the goal was growth at all costs. Some economies are still stuck here.

Green: Our new goal became sustainable development. Animal rights, equality, Paul Romer's new growth theory, the triple bottom line, and so forth all became popular in this phase as a response to problems associated with the industrial age.

Information Age: Supply is becoming automated. Economic agents need and consume information which is sometimes free and at other times very costly. Ideas like labor and production functions lost their logic, it is not about output but rather what is afforded by certain things. For example, consider the smartphone, it can't really be called a good or service in the classical sense, it is a combination of so many things that afford you to do different things. Many things are 'free' to the user because it is networked supply, where questions like who really supplies who and with what becomes more complex. Information changes our perception dramatically and our new goal is keeping up with this information. The Economy becomes so creative that it makes economists scratch their heads.

Spiral Dynamics explains that system wide changes result when individuals within societies reach critical mass, individuals change institutions and their environment to better serve their individual and collective needs, progression as well as regression is possible, and stages are present in each culture's history, in society at large as well as in individuals.

The different parts of the spectrum introduced above each saw reality in their own way and this resulted in some of the snapshots observed in the history of economic thought. With economic

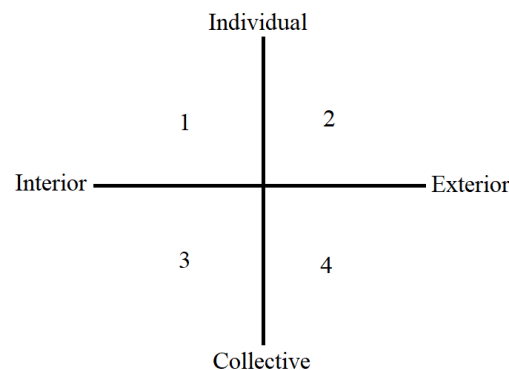
pluralism it is realised that each perspective contributes something worthy to economics. However, this paper provides a dynamic ontology. A dynamic approach is part of the second tier in Spiral Dynamics but in the end it is not important how many stages there are or how they get divided. What is important is discovering these dynamics and the way in which these operate.

3. The three variables

Neoclassical economics finds the answers to their world in demand and supply of goods and services, but since other times does not have the environment, institutions, concepts, goals and perspective assumed by the neoclassicals, where lies the answers to the real world?

We have to look past economics to psychology. Ken Wilber's Integral Theory (1996) which is related to Spiral Dynamics is the best place to look. Wilber uses four co-dependent quadrants to get a complete picture of change. We can apply this to the economic agent.

Figure 2: Four-Quadrants model of Integral Theory



The first quadrant in Wilber's model refers to processes internal (where internal means physically unobservable) to the individual. It includes motivations, preferences, feelings, desires, goals, etc.

The second quadrant refers to external processes of the individual and includes the neural system, kinesthetics, etc. This quadrant is more concerned with biology and does not form part of this paper.

The third quadrant refers to things internal to the collective. It includes culture, ethics, shared worldviews, etc.

The fourth quadrant refers to collective things that can be observed externally, it includes social structures, the natural environment, institutions, laws, technologies, events, infrastructure, etc.

This forms the basis for where we find the answers to the real world: The first variable (related to quadrant 1) is Needs (N), not just a specific set of needs considered by the orthodox economics but a range of things and concepts that humans can spend time pursuing because all of this influence opportunity cost, time spending and economic decisions. And we also don't just consider a snapshot of needs in a specific time but an evolution of needs.

The second variable (related to quadrant 4) is the things in the Environment (P) that satisfies all these needs. How we define our environment and see ourselves interact with what is around us is at the core of economics. Our environment determines what is possible and what is not, it's where we work, play and create. The classical view of the environment focuses on goods and services of industry and government. However, there is so much more to the environment that impacts opportunity cost, time spending and decisions. Here the orthodoxy leaves a gap in explaining the real world and fails to capture everything that has value to us. P gives a more broadly defined concept applicable regardless of the time you're in.

The third variable (relating to quadrant 3) is the developing consciousness or perspectives (i) which weaves itself through our society, it allows us to see possibilities that others didn't, like the enlightenment that brought an end to the dark ages and sparked the industrial age. Robert Solow (1985) once said all economic activity is embedded in a web of social institutions, customs, beliefs and economic attitudes.

An individual's past experiences in their environment determines their perception. Someone who grew up in the stage of empires and early nation states or in gang life will not have the same perception as someone who grew up after the 'green revolution'. How P and N interact given a certain i will be investigated in the section below.

4. How these dynamics interact in the real world

Applying Gibson's Theory of Affordances (1979) to economics should really have been the labour of a previous essay. It has been applied to Information Technology, design, robotics, etc but never to economics. This will now be done in a limited space.

Gibson's theory of affordances was originally introduced in ecology to describe how an animal interacts with (shapes and is shaped by) its environment. It is perfect to apply to a dynamic economic landscape since it reveals how individuals perceive value in their niche over time (Heft 2003, pp 173-176; Chemero 2003; Chemero 2013 pp 192-193; Rockwell T Chapter 10). In ecology, each species (humans included) lives in a niche, a niche is different from a habitat, it is not a place but is a way of life (it is an i), the habitat would be represented with P .

Affordance Theory's study identifies all the specific things or *features* of the environment that *affords* something to the organism given his niche. This results in a different approach to our world than what we are used to from the orthodoxy, it does not start with a representative agent model, it gives a complete picture of anything the organism can spend time on pursuing or can possibly need and how this changes through time. (Chemero 2009 pp 26.) So called features of the environment in the case of economics could be products, services, the internet, events, social media platforms, anything that affords something to the individual. Gibson and Norman (1988) explains that, in our environment, affordances represent latent possibilities independent of the individual's ability to recognize them but always in relation to the individual, for example transportation independent of whether the wheel is discovered yet (Reed, 1996 pp 26) (See Figure 1 again).

Although the theory has never been applied to economics, it fits the three variables well: Maslow's hierarchy of needs as well as the lesser known unending spiral from Spiral Dynamics both imply that Needs are sequential, so does affordance theory, treating needs as latent in the

human psyche where the satisfaction of one need affects a change in perspective which is an activation of the next need. The theory provides the links between the 3 variables, it provides the rules of how the variables interact. It also explains business models effortlessly. Starbucks isn't about the coffee but about all the other things it affords to you. A collection of event and physical features. When Starbucks closed some of its branches in Australia (Allison 2008) it was because people didn't see these affordances.

If there is a known affordance which an individual does not have access to then that individual has an unsettled need. If there is an unknown affordance there is not yet a need. Then this individual is unaware like the nomads or the Australians. To keep things simple it can be said that affordances are facts of the environment (P), they are unlimited, waiting to be discovered (Reed 1996, pp. 26), so are needs (N). An affordance is the connection between these two developing realms. This approach offers a new ontology where the focus turns to the variables responsible for change instead of the transitory phenomena resulting from change.

5. Conclusion

The dynamic approach based on the three inseparable variables and their interaction allows us to describe the real world. Instead of representations of economics connected to individual parts of the spectrum or a quadrant we can now have a type of functional definition.

In order to distinguish between the many static views of economics, let each of those be represented with a small letter e followed by a constant (i) to represent their specific perception, while the dynamic view of economics is represented with a capital E .

$$e_{i=1}, e_{i=2}, e_{i=3}, e_{i=4}... \text{ as opposed to } E$$

Orthodox definitions say "economics is a study of unlimited needs and scarce resources". In that constant point in time with the certain set of needs and state of development in the environment the perception indeed was that "economics (e_i) is the study of endless needs (n_i) and scarce resources (p_i). It was all about the specific subset of Needs (N) from industrial era perception (i) and the specific environmental features (p_i) that they considered according to their perspective, represented by active affordances.

$$e = n_i p_i$$

But since definitions shouldn't just focus on one perspective, E conomics = everything from $i=1$ up to $i=\infty$ to include all perspectives that could impact our needs and reveal affordances as the dynamic system unfolds over time.

We can represent the summation of small letters with capital letters. Everything in the economic world, every activity, advance and opinion is the result of a dynamically interacting creative force between our Needs (N), platforms (P), and changing perception (i). That is our dynamic definition of economics.

$$E = f \left(\sum_{i=-\infty}^{\infty} n_i \quad \sum_{i=-\infty}^{\infty} p_i \right)$$

Economics as a function of our changing Needs and Platforms.

From this perspective N and P are both unlimited with the active part determined by i . Further work could: (1) Investigate the implications of this related to understanding various economic concepts including how scarcity changes when we treat affordances as resources. (2) Fully develop the application of Affordance Theory to economics. (3) Apply the second quadrant of Integral Theory to the Dynamic Approach related to technology that enhances human biology. (4) Comment on micro and macro considerations of this approach. (5) Developing the three variables, measuring their active and latent parts empirically or mathematically - The Dynamic Approach and definition could apply to narrative, empirical, complexity or quantitative techniques or any combination thereof.

We can look at all these industrial age concepts that have lost their logic and see in what new ways these may be expanded or dynamified to bring them in line with the open world we live in. For example instead of thinking about supply and demand in a production function or about static classifications of goods and services we can start thinking about access to affordances and about affordances being either active or latent. We can classify environmental features into groups or sets according to their specific attributes, which shows the shift from autonomous supply to dependent supply and onwards to automated or networked supply to give insight to the workings of the real world.

REFERENCES

- Allison, M 2008 'Starbuck closing 73% of branches in Australia', *The Seattle Times*, July 29 2008. Page 3.
- Backhouse, R. 2001. 'How and Why should we Write the History of Twentieth-Century Economics', *Journal of the history of economic thought*. June 2001 23(02):243-251.
- Roger E. Backhouse & Philippe Fontaine, 2010. "Introduction: History of Economics as History of Social Science," *History of Political Economy*, Duke University Press, vol. 42(5), pages 1-21.
- Beck, D; Cowan, C, 8 May 1996. *Spiral Dynamics: Mastering Values, Leadership, and Change*. Blackwell Publishing. Chichester.
- Chemero A, 2003 An outline of a theory of affordances. *Ecological Psychology*. doi: 10.1207/S15326969ECO1502_5
- Chemero A, 2009 *Radical embodied cognitive science*, MIT Press, Cambridge.

Chemero A, 2013 Radical embodied cognitive science, *Review of General Psychology* doi: 10.1037/a0032923

Dawkins, R, 1976, *The selfish gene*. Oxford University press, Oxford University.

deRoover, R,. 1958, 'The Concept of the Just Price: Theory and Economic Policy', *The Journal of Economic History*. Vol.18, No.4 (Dec.,1958), pp. 418-434. Published by Cambridge University Press.

Dow, S 2009. 'History of Thought and Methodology in Pluralist Economics Education', October 2009 Sheila Dow, *A Pluralist Handbook for Economics Education*, London: Routledge, 2009, pp. 43-53.

Fullbrook, E 2008 'Pluralist Economics'. 2008 - philpapers.org. Palgrave Macmillan

Gibson, J. 1979 'The Theory of Affordances: The Ecological Approach to Visual Perception', Houghton Mifflin, Boston.

Gordon, D 1965 'The Role of the history of economic thought in the understanding of modern Economic theory'. *The American Economic Review* Vol.55, No.½ (Mar. 1, 1965) pp. 119-127.

Graves, C, 1970. 'Levels of Existence: An Open System Theory of Values', *Journal of Humanistic Psychology*. 10(2): 131-155

Heft 2003 Affordances, Dynamic Experience, and the Challenge of Reification *Ecological psychology*, 15(2), 149–180

Keynes, J.M. 1936 *The General Theory of Employment, Interest and Money*, The Macmillan Company, London.

Natsoulas, T 2004 'To see things is to perceive what they afford: James J. Gibson's concept of affordance' *The journal of mind and behaviour* Vol. 25 No.4 pp. 323-347 Published by Institute of Mind and Behaviour, Inc.

Norman, D 1988, *The design of everyday things*, Basic Books, New-York.

OECD 2019 Organisation for Economic Cooperation and Development. SG/NAEC(2019)3 12 Sept 2019. *Beyond growth: Towards a new economic approach*. 17-18 Sept 2019, OECD Conference Centre.

Reed, E 1996, *Encountering the World: Toward an Ecological Psychology*. Oxford University Press, New-York.

Rockwell, T 2005 *Neither brain nor ghost: A non dualist alternative to mind-brain identity theory*
Chapter 10: Dewey and the Dynamic Alternative.

Sahlins, M 1972 The Original Affluent Society. Extract from *Stone Age economics* by Marshall Sahlins. 1972 Aldine Atherton Inc. Chicago, Illinois.

Smith, A 1776, *An Enquiry into the nature and causes of the Wealth of Nations*, W. Strahan and T. Cadell, London.

Solow, R. (1985). Economic History and Economics. *The American Economic Review*, 75(2), 328-331.

IEDAE (2016) *Dynamic Theory of Needs Supply and Progress*. May 12 2016, Available online <<https://youtu.be/ids3CyA5EKQ>>

Weeks, J 1989, *A critique of neoclassical macroeconomics*. St. Martins Press. New York

Wilber, K 1996, *A brief history of everything*. Boston and London: Shambhala pp.200-285.

Williams, J, McNeill, J, 'The current crisis in neoclassical economics and the case for an economic analysis based on sustainable development', U21 Global Working Paper, 2005.