Sustainability thoughts 187: If markets were optimal in 1776, then where did the 1987 overpopulation problem come from? Can the dependency theory and the golden trojan paradigm theory explain this?

By

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Abstract

Adam Smith's gave us in 1776 an optimal perfect market paradigm that was supposed to maintain optimal impacts on population dynamics and system stability, but by 1987 the world was facing an over-population problem and a pollution problem. In other words, the traditional market paradigms turned out to be a golden trojan paradigm as it allows for critical problems to develop through time while expecting optimal outcomes, and this distortion get amplified and made extreme by the market dynamics and population dynamics independency assumptions, which hold that they do not affect each other when affecting system stability. We seem to know where the pollution problem came from the point of view of the assumption of market dynamics and population dynamics independence, but not where the population problem came from. And this raises questions such as If markets were optimal in 1776, then where did the 1987 overpopulation problem come from? Can the dependency theory and the golden trojan paradigm theory explain this? Among the goals of this paper is to provide answers to those questions.

Key concepts

Optimal market, optimal traditional market, distorted market, distorted traditional market, optimal system stability, environmental problems, population dynamics, market dynamics, traditional market, dynamics, negative system stability impact, positive system stability impact, overpopulation problem

Introduction

i) The 1776 world under market optimality assumption

The structure of the optimal traditional market model Adam Smith (Smith 1776) shared with us in 1776 can be summarized in simple terms as shown below:

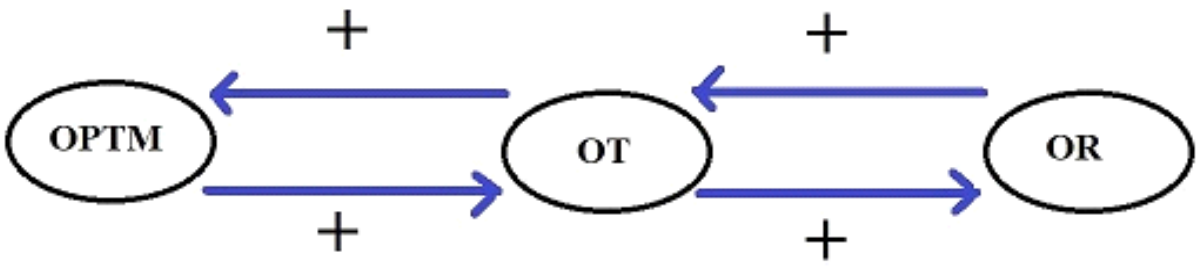

Figure 1 The 1776 M-T-R framework under optimality

Figure 1 above tells us that optimal traditional markets (OPTM) are expected to have an optimal impact (+) on population dynamics (OT), which have a positive impact (+) on system dynamics (OR) as optimal production and optimal consumption dynamics supports optimal population dynamics (OP) as indicated by the arrows going from left to right. Optimal populations (OT) live below or within the carrying capacity of the optimal system (OR). A positive influence is noticed from right to left as optimal market dynamics (OPTM) are stimulated by positive influences via optimal loop OR to OT. The optimal traditional market structure above comes along under externality neutrality assumptions (Muñoz 2022a) as they are a form of responsible traditional market behavior (Muñoz 2022b), which leads to optimal or responsible consequences.

IMPLICATION 1

The traditional market thinking of Adam Smith of 1776 is a golden paradigm by assumption as it is assumed to be optimal, with no embedded abnormalities.

ii) The 1987 world under distorted market reality

The structure of the distorted traditional market conditions that the Brundtland Commission found in 1987(WCED 1987) can be stated as indicated in Figure 2 below:

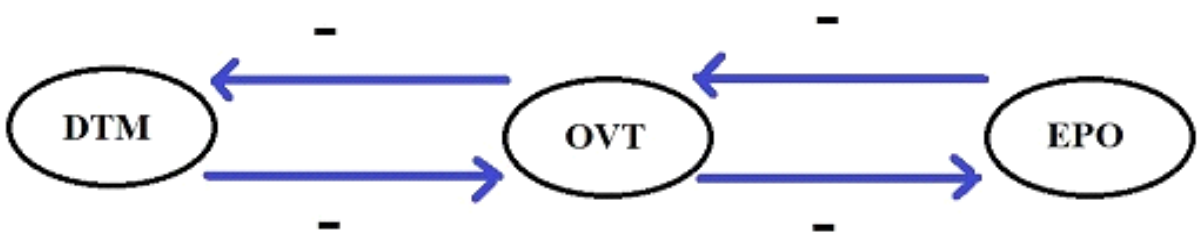

Figure 2 The 1987 M-T-R framework documented by the Brundtland Commission

The World Commission on Environment and Development documented in 1987 that the traditional market had not worked as expected as they did not reflect relevant social and environmental concerns, and this had led to among other things environmental pollution problems(EPO) and over population problems(EPO), finding consistent with Figure 2 above as not reflecting social and environmental concerns is key to how optimal traditional markets work

since they work under social and environmental neutrality assumptions renders them as distorted traditional markets(DTM). The fact that perhaps we have been living under distorted markets since the beginning was pointed out recently (Muñoz 20102). And notice too, that the same distorted system stability situation in Figure 1 above was the one the United Nations Commission on sustainable development (UNCSD 2012a; UNCSD2012b) tried to address at Rio + 20 Conference through environmental problem prioritization.

Figure 1 helps us to see that distorted traditional markets (DTM) are expected to have a negative impact (-) on population dynamics (OVT), which have a negative impact (-) on system dynamics(R) creating environmental problems (EPO) as non-optimal production and non-optimal consumption dynamics supports non-optimal population dynamics (OVT) as indicated by the arrows going from left to right. Non-optimal populations dynamics (OVT) live above the carrying capacity of the non-optimal system under environmental problems (EPO). A negative influence is seen from right to left as distorted traditional market dynamics (DTM) are stimulated by negative influences via the negative loop EPO to OVT. The non-optimal traditional market structure above comes along when accounting for externality costs is binding as the externality assumptions were wrong and need to be corrected (Muñoz 2022a) as they are a form of irresponsible traditional market behavior (Muñoz 2022c), which leads to non-optimal or irresponsible consequences.

IMPLICATION 2

The traditional market thinking of Adam Smith turned out to be by 1987 a flawed paradigm as optimality did not work as it had embedded abnormalities all along created by the externality neutrality assumptions.

iii) The structure of the 1776-1987 market theory-practice inconsistency behind over population problems and environmental problems

Linking the optimal situation that started in 1776 with the distorted situation found by the Brundtland commission in 1987 we arrive to the theory-practice inconsistency that forms the structure of the golden trojan traditional market paradigms as highlighted in Figure 3 below:

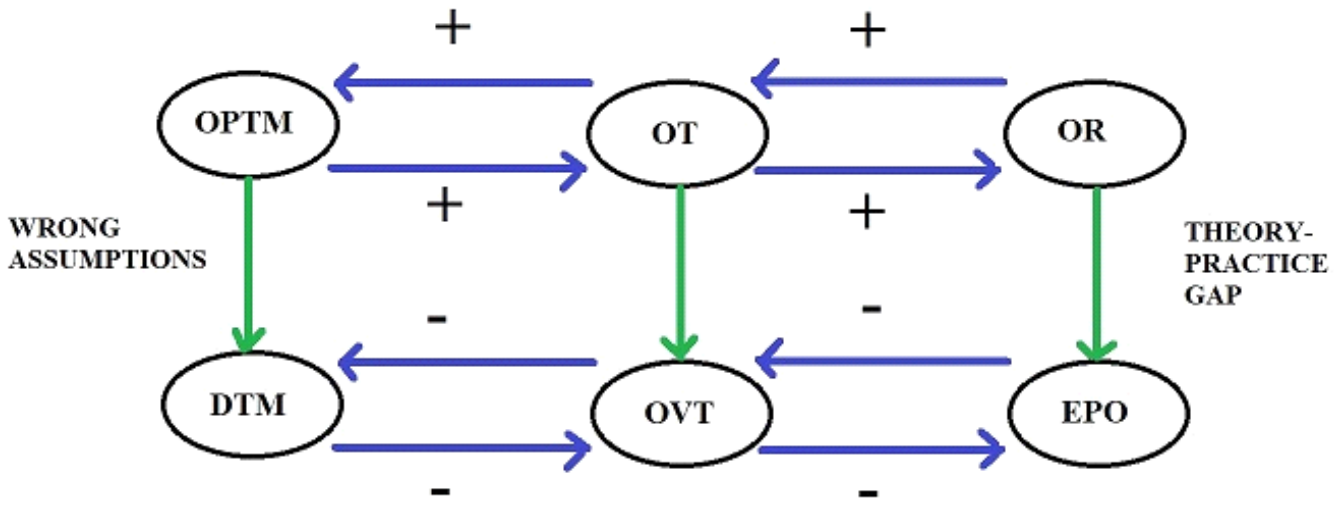

Figure 3 The structure of the failure of Adam Smith's optimality market thinking under externality neutrality assumptions to fit the non-optimality based reality, 1776-1987.

Figure 3 above highlights the theory-practice gap between the optimal assumptions and expectations given in 1776 at the top of figure and the practical situation documented in 1987 by the Brundtland Commission described at the bottom of the figure, a discrepancy created by the optimality assumptions under social and environmental externality neutrality assumptions being wrong. In other words, the optimal traditional market in 1776 was a distorted market(DTM) from the beginning as it did not account for the social and environmental cost associated with business activity that while they may have been no existent or insignificant at first they should have been expected to grow as economies grow through time, and this means that we have been under distorted traditional markets(DTM) all the way along since 1776, driven population dynamics towards over population(OVT) and driving system stability towards environmental problems(EPO). In other words, Figure 3 above allows us to appreciate that optimal traditional markets (OPTM) turned out to be distorted traditional markets (DTM), optimal population dynamics expectations (OT) became over population dynamics (OVT), and optimal system stability expectations (OR) became environmental problems (EPO). In other words, Figure 3 above describes the structure of the golden trojan traditional market paradigm as a non-optimal model(flawed model) was assumed to be optimal by the way of externality neutrality assumptions and keep it without limits that way; and as optimal outcomes were expected, the golden trojan paradigm goes into the process of ignoring consequences, to downplaying consequences, to hiding consequences, and finally to accepting that there are consequences while critical problems like overpopulation problems(OVT) and environmental problems(EPO) come to life in plain sight.

IMPLICATION 3

The traditional market thinking of Adam Smith turned out to be a golden trojan paradigm as a non-optimal paradigm (a flawed paradigm) was assumed in 1776 to be optimal (to be a golden paradigm), which led in the long term under factor dependency to overpopulation problems and environmental problems.

iv) The need to understand where the overpopulation problem came from

Adam Smith's gave us in 1776 an optimal perfect market paradigm that was supposed to maintain optimal impacts on population dynamics and system stability, but by 1987 the world was facing an over-population problem and a pollution problem. In other words, the traditional market paradigms turned out to be a golden trojan paradigm which under factor dependency allows for critical problems to develop through time while expecting optimal outcomes, and this distortion get amplified and made extreme by the market dynamics and population dynamics independency assumptions, which hold that they do not affect each other when affecting system stability. We seem to know where the pollution problem came from the point of view of the assumption of market dynamics and population dynamics independence, but not where the population problem came from. For example, the Brundtland Commission(WCED 1987) linked environmental problems to improperly working traditional markets while ecological overshoot thinkers linked environmental problems to overpopulation dynamics (Rees 2022) as they implicitly or explicitly take market dynamics and population dynamics as independent factors leading to environmental problems, creating the situation of having two different root-causes to the same problem: One is market dynamics and the other is population dynamics. But we need to keep in mind that if factors are dependent and we assume them to be independent we can cause distortions, knowledge and policy distortions if the assumption turns out to be wrong, affecting the choice of best corrective actions available (Muñoz 2023). And this raises questions such as If markets were optimal in 1776, then where did the 1987 overpopulation problem come from? Can the dependency theory and the golden trojan paradigm theory explain this? Among the goals of this paper is to provide answers to those questions.

Goals of this paper

1) To point out the structure and consequence of a world where markets operate under population dynamics neutrality assumptions; 2) To highlight the structure and consequences of a world where population dynamics works under market dynamics neutrality assumptions; 3) To stress the structure and consequences of a world where market dynamics and population dynamics are not independent factors; 4) To state the structure of the golden trojan traditional market paradigm that allows critical problems to develop in front of our eyes as we do not expect them; and 5) To indicate the structure and consequences of the distorted market road under the cover of golden trojan traditional market thinking from short to very long term towards the making of overpopulation problems.

Methodology

First, the terminology and operational concepts and tools are given. Second, the structure and consequence of a world where markets operate under population dynamics neutrality assumptions are indicated. Third, the structure and consequences of a world where population dynamics works under market dynamics neutrality assumptions are shared. Fourth, the structure and consequences of a world where market dynamics and population dynamics are not independent factors are pointed out as well as the structure of the traditional market as a golden

trojan paradigm. And fifth, the structure and consequences of the distorted traditional market road under golden trojan market thinking both short to very long term towards the making of overpopulation problems are highlighted. And finally, sixth, some food for thoughts and conclusions are listed.

Terminology

M = Market dynamics T = Population dynamics

R = System stability dynamics OM = Optimal market dynamics

OT = Optimal population dynamics OR = Optimal system stability dynamics

DM = Distorted market dynamics DT = Distorted population dynamics

DR = Distorted system stability dynamics TM = Traditional market dynamics

OPTM = Optimal traditional market dynamics EPO = Environmental problems

DTM = Distorted traditional market dynamics OVT = Over population problems

M-T-R = Market, population, and system stability framework

DM-DT-DR = Distorted market, population and system stability framework

DTM-DT-DR = Distorted traditional market, population and system stability framework

MDTM-OVT-EPO = Most distorted traditional market, over population and environmental problem framework

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Operational concepts

1) Golden paradigm, one without abnormalities.

2) Flawed paradigm, one with abnormalities embedded in it.

3) Golden trojan paradigm, one where a flawed paradigm assumed to be a golden paradigm.

4) Optimal market, one where all costs associated with production are accounted for.

5) Distorted market, one where not all costs linked to production are accounted for.

6) Optimal trojan market, one that assumes that cost externalization is optimal.

7) Optimal traditional market, one where all market costs are accounted for.

8) Distorted traditional market, one where only the economic costs are accounted for.

9) Optimal trojan traditional market, one that assumes that accounting for only economic costs is optimal.

10) Market and population independence assumption, the one that holds that market and population dynamics affect system stability independently and without affecting the other, whether they act independently through a positive or negative loop.

11) Market and population dependency assumption, the one that holds that market dynamics affects population dynamics, which affects system stability, creating a positive or negative loop.

12) Traditional market and population independence assumption, the one that holds that traditional market and population dynamics affect system stability independently and without affecting the other, whether they act independently through a positive or negative loop.

13) Traditional market and population dependency assumption, the one that holds that traditional market dynamics affects population dynamics, which affects system stability, creating a positive or negative loop.

Traditional market dynamics under population dynamics impact neutrality assumptions: Independency case 1

When we assume that traditional market dynamics and population dynamics are independent of each other, and hence, we assume that traditional market dynamics have no impact on population dynamics we create the situation stated in Figure 4 below:

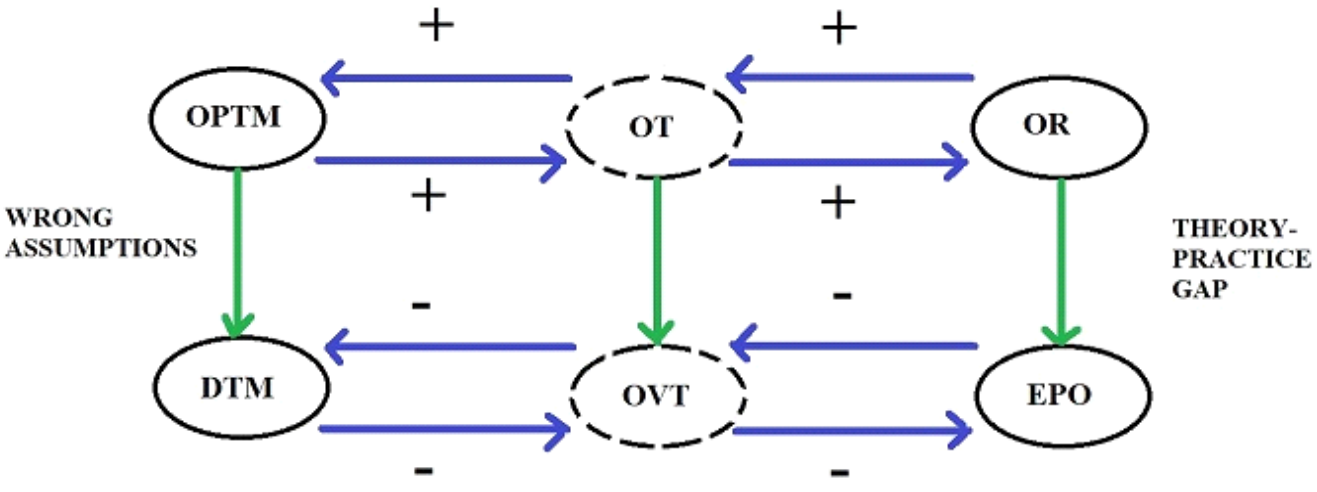

Figure 4 Markets under population dynamics neutrality assumption 1776-1987 : INDEPENDENCY CASE 1

Figure 4 above displays the case of independency between traditional market dynamics and population dynamics in 1776 and in 1987, where market dynamics works under population

dynamics impact neutrality assumptions as indicated by the broken circles around OT and OVT. We can point of out the following aspects about the independence case 1 based Figure 4 above: a) The optimal traditional market of Adam Smith in 1776 shown on top of Figure 4 has a positive loop with system stability as optimal traditional market dynamics (OPTM) has a positive impact (+) on system stability leading to optimality (OR) as indicated by the blue arrows from OPTM to OR, all taking place without affecting population dynamics as indicated by the broken circle around optimal population (OT). Notice that there is an opposite positive loop from OR to OPTM that does not affect population dynamics either; b) The distorted version of the traditional market of Adam Smith found at the bottom of Figure 4 of 1987 has a negative loop with system stability as distorted traditional market dynamics (DTM) have a negative impact (-) on system stability leading to non-optimality manifested in the long term as an environmental problem(EPO) as indicated by the blue arrows from DTM to EPO, all taking place without affecting population dynamics as indicated by the broken circle around over population(OVT). Notice that there is an opposite negative loop instead from EPO to DTM that does not affect population dynamics either; c) The optimal traditional market dynamics (OPTM) in 1776 evolved into distorted traditional market dynamics (DTM) by 1987, driving expected optimal system stability (OR) into environmental problems (EPO) through time, all done without affecting the nature of population dynamics; and d) The optimal system(OT) stability structure in 1776 moved through time to the distorted system(DR) stability structure of 1987 pointing out a traditional market dynamics theory-practice gap that appears because the market optimality assumptions and no population impact assumptions or population impact neutrality assumptions turned out to be wrong as it can be seen in Figure 4 above.

IMPLICATION 4

The traditional market dynamics approach under population dynamics impact neutrality assumptions: Independency case 1 does not explain the origin of the overpopulation problem 1776-1987 as it is assumed to have no impacts on population dynamics. Here optimal aspects-based traditional market dynamics leads to optimal system stability, which then turned negative aspects in the form of distorted traditional markets and environmental problems, where the root cause of environmental problems, ignoring the origin of the overpopulation problem, is distorted traditional market dynamics.

Population dynamics under traditional market impact neutrality assumptions: Independency case 2

When we assume that traditional market dynamics and population dynamics are independent of each other, and hence, we assume that population dynamics have no impact on traditional market dynamics we arrive to the situation stated in Figure 5 below:

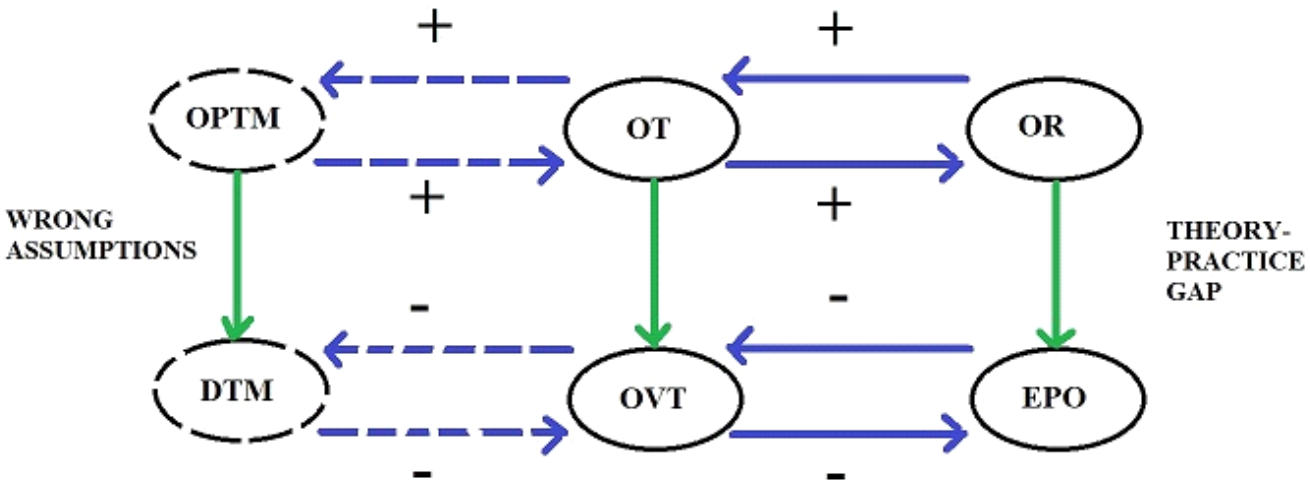

Figure 5 Population dynamics under market dynamics neutrality assumption 1776-1987 : INDEPENDENCY CASE 2

Figure 5 above displays the case of independence between traditional market dynamics and population dynamics in 1776 and in 1987, where population dynamics works under traditional market dynamics impact neutrality assumptions as indicated by the broken circles around OPTM and DTM. We can exalt the following aspects based on Figure 5 above: a) The optimal population framework of 1776 shown on top of Figure 5 has a positive loop with system stability as optimal population dynamics (OT) has a positive impact (+) on system stability leading to optimality (OR) as indicated by the blue arrows from OT to OR, all taking place without affecting traditional market dynamics as indicated by the broken circle around optimal traditional market dynamics (OPTM). Notice that there is an opposite positive loop from OR to OT that does not affect optimal traditional market dynamics either; b) The distorted version of population dynamics found at the bottom of Figure 5 present in 1987 has a negative loop with system stability as distorted population dynamics (OVT) have a negative impact (-) on system stability leading to non-optimality manifested as an environmental problem(EPO) as indicated by the blue arrows from OVT to EPO, all taking place without affecting traditional market dynamics as indicated by the broken circle around distorted traditional markets(DTM). See that there is an opposite negative loop instead from EPO to OVT that does not affect distorted traditional market dynamics either; c) The optimal population dynamics view (OT) in 1776 evolved into distorted population dynamics (DT) in the form of overpopulation problem (OVT) by 1987, driving expected optimal system stability (OR) into environmental problems (EPO) through time, all done without affecting the nature of traditional market dynamics; and d) The optimal system stability structure in 1776 moved through time to the distorted system stability structure of 1987 pointing out population dynamics theory-practice gap that appears because the population optimality assumptions and no traditional market impact assumptions or traditional market neutrality assumptions turned out to be wrong as it can be seen in Figure 5 above.

IMPLICATION 5

The population dynamics approach under traditional market impact neutrality assumptions: Independency case 2 does not explain the origin of the overpopulation problem such as how we can go from optimal population dynamics to overpopulation dynamics and

environmental problems with population dynamics acting along as it assumes no traditional markets influences, optimal or distorted influences. Here optimal population dynamics and optimal system stability, positive forces, became through time negative forces in the form of overpopulation problems and environmental problems, where the root-cause of environmental problems now, ignoring the origin of the overpopulation problem, is overpopulation.

Market dynamics and population dynamics as dependent variables and system stability impacts

If traditional market dynamics and population dynamics are dependent of each other, they are not independent, and hence, the nature of traditional market dynamics affect population dynamics and system stability dynamics, then we have the situation summarized in Figure 6 below.

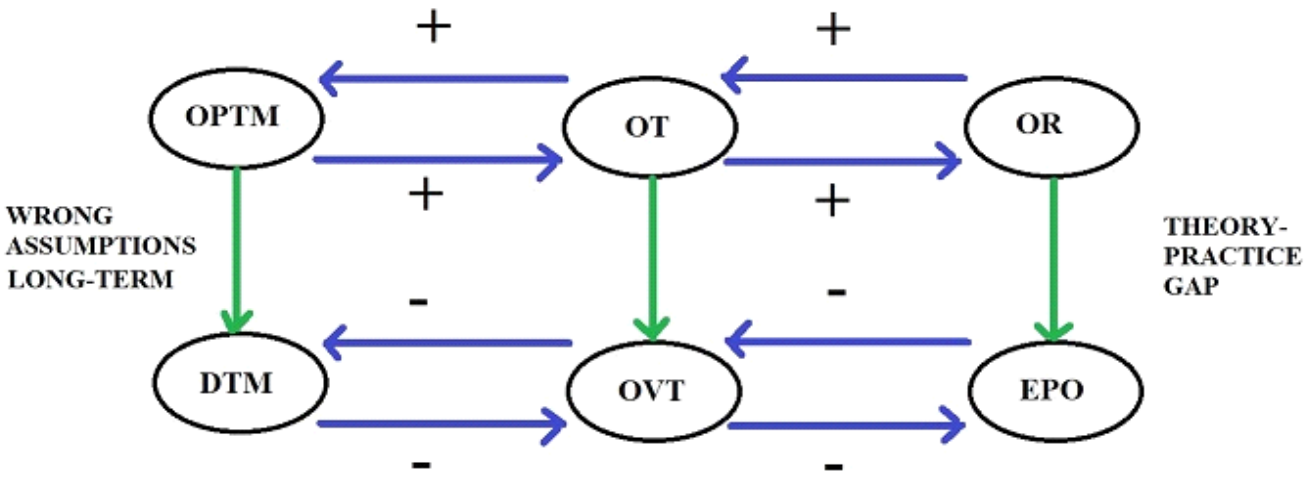

Figure 6 Market dynamics and population dynamcis as dependent factors under optimality assumptions and non-optimality assumptions 1776-1987

We can appreciate the following aspects based on the information in Figure 6 above: a) If traditional markets are optimal markets (OPTM) they will lead to optimal population dynamics (OT) and optimal system stability (OR) as populations would live below or within the carrying capacity of the system, and therefore, they will not overshoot; b) If the optimality assumptions are wrong through time in the long-term the optimal traditional market(OPTM) will tend towards the most distorted traditional market (DTM) as the green arrow from OPTM to DTM indicates as it will tend to produce at the lowest traditional market price possible as it expands leading through time to over production, over consumption, over population and environmental problems; and then overpopulation will overshoot; and c) the root-cause of environmental problems(EPO) when traditional market dynamics and population dynamics are dependent is the distorted traditional market (DTM) only as overpopulation is here a consequence of long-term distorted traditional market behavior.

Hence, the optimality portion on top of Figure 6 above is consistent with Adam Smith's 1776 expectations of optimal traditional market activity leading to optimal impacts on

populations dynamics and system stability, and the distorted portion on bottom of Figure 6 is consistent with the overpopulation problems and environmental problems that the Brundtland Commission recorded in 1987; and the gap between optimality assumptions/theory and distorted reality/practice points out the consequences in the very long term of assuming that distorted paradigms are optimal paradigms as when we assume this we are creating golden trojan paradigms, which creates the conditions for critical problems to develop slowly in plain sight, but surely as we do not expect them to come to pass. In other words, as a distorted traditional market was assumed an optimal traditional market in 1776, we created a golden trojan paradigm then, which led to the opposite expectations, instead of optimal outcomes we ended up with critical population and environmental problems by 1987.

IMPLICATION 6

The traditional market dynamics and population dynamics dependency approach explains the origin of optimal populations and optimal system stability as caused by optimal market dynamics as expected by Adam Smith; and it explains the origin of the overpopulation problem and environmental problems affecting system stability as being caused by distorted market dynamics as documented by the Brundtland Commission in 1987. Notice here that over population here is a consequence of long term distorted traditional market activity, not a root cause of environmental problems.

IMPLICATION 7

Figure 6 above describes the structure of the golden traditional market trojan paradigm as it presents a flawed traditional market paradigm (DTM) as an optimal paradigm (OPTM), which allows overpopulation problems and environmental problems to materialize through time in front of our eyes, problems we may first ignore and / or downplay until we can no longer hide them anymore as the WCED documented.

The road to the over-population problem 1776-1987 under the golden trojan traditional market paradigm in simple terms

i) The short to medium term

When Adam Smith proposed the theory of the optimal market in 1776 the externality cost associated with economic activity were non-existence or insignificant, but he should have expected those externalities to slowly but surely increase through time as economic expansion took place, but he assumes them away by means of what is known at the externality neutrality assumption that allows the invisible hand or the free market to work without limits. Hence, in short to medium term the negative impacts from traditional market activity on population dynamics(T) and system stability(R) were minimal, but as the externalities started to grow and accumulate as the golden trojan traditional market expansion took place, a situation indicated in Figure 7 below comes to life:

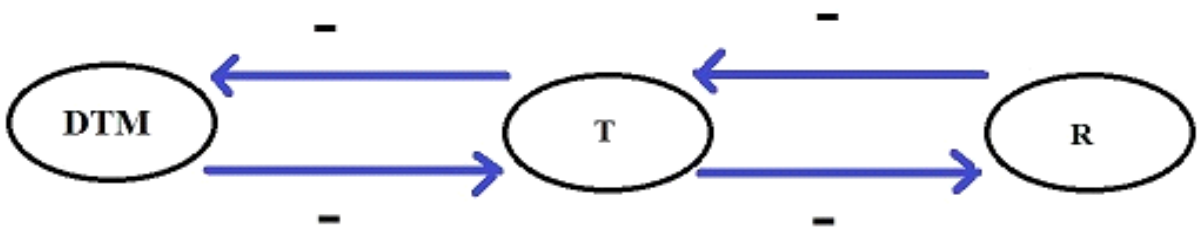

Figure 7 The working of the distorted traditional market(DTM) since 1776: SHORT TO MEDIUM TERM

Figure 7 above stresses that in the short to medium terms distorted traditional markets (DTM) have minimal negative impacts on population dynamics(T) and population dynamics have minimal impacts on system stability(R) as they do not overshoot; and system dynamics(R), on the other hand, has a minimal impact on population dynamics(T), and population dynamics(T) have a minimal impact on distorted traditional market dynamics (DTM). A minimal to moderate negative loop feeding a minimal to moderate negative loop, which are impacts that can be either ignored or downplayed or minimized.

IMPLICATION 8

In the short to medium term distorted golden trojan market impacts under factor dependency on population dynamics and system stability are minimal and they are ignored when they start to show up or downplayed or hidden.

ii) The very long-term

As the market tended to produce at the lowest cost possible to maximize profits it tended towards the most distorted form of traditional market under golden trojan cover that led in the end to overproduction and overconsumption, which drove population dynamics towards over population problems and environmental problems as now over population tend to overshoot, ecologically and socially, a world summarized in Figure 8 below:

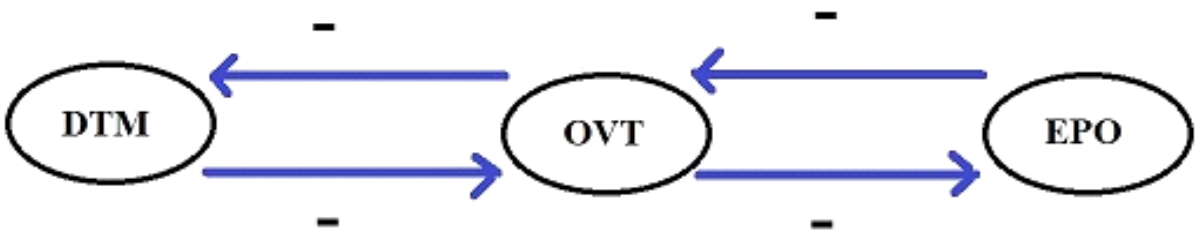

Figure 8 The working of the distorted traditional market(DTM) since 1776: THE VERY LONG TERM TO 1987

Figure 8 above tells us that the most distorted form of traditional market (DTM), the one that produces at the lowest cost possible has such a negative cumulative impact on population dynamics that leads to overpopulation (OVT), which feeds social and ecological overshooting that worsen the state of environmental problems (EPO). Then, environmental problems (EPO) have a negative impact on overpopulation dynamics (OVT) and overpopulation dynamics have a negative impact of distorted traditional market dynamics (DTM), an extremely distorted negative loop feeding an extremely distorted negative loop.

IMPLICATION 9

In the very long-term distorted golden trojan market impacts under factor dependency on population dynamics and system stability are extreme and they can no longer be ignored or downplayed or hidden as they come in the form of critical overpopulation and environmental problems.

Food for thoughts

a) Is circular traditional economic thinking another form of golden trojan traditional market paradigm? I think Yes, what do you think? b) Is the market that leads to distorted outcomes a perfect market? I think No, what do you think? c) If two variables are dependent on each other as they interact with system stability, can there be more than one root cause? I think No, what do you think?

Conclusions

First, it was pointed out that the traditional market approach when working under population dynamics neutrality assumptions does not explains where the overpopulation problem 1776-1987 came from as it has no impacts, optimal or distorted on population dynamics. Second, it was highlighted that the population dynamics approach when working under traditional market impact neutrality assumption does not explain how the overpopulation problem 1776-1987 came from as it apparently came from optimal population conditions. Third, it was stressed that the traditional market dynamics and population dynamics dependency approach explains both the origin of overpopulation problems, the origins of environmental problems as well as the root-cause of system stability problems developed during the period 1776-1987. Fourth, it was indicated that the overpopulation problem and environmental problems 1776-1987 came to be in plain sight because assuming that a distorted traditional market was an optimal market created a golden trojan traditional market paradigm, which allows for expected optimal outcomes to transform through time into extremely distorted outcomes like overpopulation and environmental problems and overshoot as the assumed optimal model had embedded distortions such as externality neutrality assumptions that drive the creation of critical problems. Fifth, it was exalted that the negative impacts that distorted traditional market dynamics or golden trojan market dynamics had in the short to medium term from 1776 were minimal, but when they increased due to market expansions they were ignored or downplayed. Sixth, it was stated that when the distorted traditional market negative impact or the golden trojan market negative impact on population dynamics and system stability became increasingly extreme it led to overpopulation problems and environmental problems and overshoot by 1987, then the extreme cumulative impacts could no longer be downplayed or hidden, and corrective action needed to be taken.

In general, it was shown i) that a golden trojan traditional market paradigm under market dynamics and population dynamics dependency should be expected to lead in the very long term to over population and environmental problems, which explains the reality 1776-1987; ii) that a golden trojan traditional market paradigm under population neutrality assumptions should be

expected to lead in the long term to environmental problems without having population dynamics impacts so it does not explain where the overpopulation problem came from 1776-1987; and iii) a golden trojan population dynamics approach should be expected to lead in the long term to over population and environmental problems but without explain how optimal population dynamics and optimal system stability became extreme 1776-1987 and without being affected by market dynamics.

References

Muñoz, Lucio, 2010. **What if markets have always been distorted? Would it then be a good fix to add fair trade margins to correct distorted agricultural prices?** , ***Journal of Sustainability***, Issue 2, Number 4(Spring), Rio Rancho, New Mexico USA.

Muñoz, Lucio, 2022a. **Sustainability thought 167: How to link market structure-population dynamics-system stability framework theory to traditional market thinking under externality neutrality assumptions and under no externality neutrality assumptions?** In: ***CEBEM-REDESMA Boletin,*** Año 16, Nº 7, July, La Paz, Bolivia.

Muñoz, Lucio, 2022b. **Sustainability thought 161: How to link the market structure-population dynamics-system stability framework to the concept of responsible and irresponsible market pricing? What are the main implications of doing this?** In: International Journal of Business Management and Economic Review (IJBMER), May-June 2022, Volume 5, Issue 3, May-June, Pp. 37-44, ISSN 2581-4664, India.

Muñoz, Lucio, 2022c. **Sustainability thought 159: How can the general irresponsible market structure, irresponsible population dynamics and irresponsible system stability framework be used to point out the embedded neutrality assumptions under which irresponsible population dynamics frameworks like the ecological overshoot work?** In: IAR Journal of Tourism and Business Management (IARIJTBM), Vol. 2, Issue 3, Pp. 1-7, ISSN Print: 2789-6013 | ISSN Online: 2789-6021, Kenya.

Muñoz, Lucio, 2023. **Sustainability thought 186: Sharing a general system stability theory under independent and dependent variable responsibility: The case of traditional market, population dynamics and system stability frameworks**, In: International Journal of Latest Engineering and Management Research (IJLEMR) ISSN: 2455-4847, Vol. 08, Issue 10, October, PP. 71-82, India.

Rees, William, 2022. **A Note on Climate Change and Cultural Denial**, The Modern Pelican Journal, Vol. 18, No. 1, January, Ed. Luis Gutiérrez, PhD, New Haven, CT, USA.

Smith, Adam, 1776. ***The Wealth of Nations***, W. Strahan and T. Cadell, London, UK.

United Nations Conference on Sustainable Development (UNCSD), 2012a. ***Rio+20 Concludes with Big Package of Commitments for Action and Agreement by World Leaders on Path for a Sustainable Future*****,** Press Release, June 20-22, New York, NY, USA.

United Nations Conference on Sustainable Development (UNCSD), 2012b. ***The Future We Want*** , June 20-22, New York, NY, USA.

World Commission on Environment and Development (WCED), 1987. ***Our Common Future***, Oxford University Press, London, UK.