Short Elucidating Note 106: Does placing traditional optimality thinking under the conjunctural determinism theorem shifts it systematically to higher level optimal responsibility paradigm thinking? If yes, why?

By

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Abstract

It is a fact that linear optimality thinking for example a la traditional markets holds that if efficient allocation of resources exist and no agent can be made worse off while making other agents better off, then there is pareto optimality, no concern exist here about the impact of each agent's decisions on other agents as components are assumed to be independent of each other and this is so as there is an externality production neutrality assumption at work. But we have known now formally since WCED 1987, in the face of critical development problems, that this independent assumption turned out to be externality production problem friendly. The conjunctural optimality determinism theorem a la Lucio Muñoz indicates that agents behave codependently following their joint self-interest as the externality production problem is now internalized. Therefore, conjunctural Pareto optimality is higher level type of optimality than linear market or traditional market's optimality in externality responsibility terms. And this means a shift from linear optimality to conjunctural optimality is a shift from lower level Pareto optimality points to higher level optimality points, but this view is not well-known or it is misunderstood as there seem to be a tendency to look at conjuncturally based academic work on optimality as an extension of additive thinking optimality when they are incompatible views at the same level of analysis. Hence, the discussion above makes the following question, relevant: Does placing traditional optimality thinking under the conjunctural determinism theorem shifts it systematically to higher level optimal responsibility paradigm thinking? If yes,why?

Key concepts

Traditional market optimality, conjunctural optimality, independent variable thinking, codependent variable thinking, paradigm shift

The nature of linear optimality model thinking in simple terms

If we assume a linear system M_L with two independent components K and L, then the nature of its model structure and of its characteristics (C_i) can be stated as shown below in simple terms:

i) The model

The structure of the linear optimality model under no codependence looks like indicated below:

1) M_L = K + L, where KL = 0 as the codependent state does not exist.

The linear optimality model M_L above says that you can maximize K at the expense of L or you can maximize L at the expense of K, but the maximization process followed by one agent does not affect the other agent as there is here an externality production neutrality assumption, which means model M_L can expand as much as it wants without producing externalities.

ii) The independent characteristics of the model

If the linear optimality model ML has "n" characteristics defining it, their additive structure is as follows:

2) C_L = C1 + C2 + ….Cn

The nature of conjunctural thinking a la Lucio Muñoz in simple terms

If we assume a codependent system M_C with two codependent components K and L, then the nature of its model structure and of its codependent characteristics (CC_i) can be stated as shown below in simple terms:

i) The model

The structure of the codependent optimality model under no independence looks like as shown below:

3) M_C = KL where K = L = 0 as the independent state does not exist.

The codependent optimality model M_C above says that you can optimize the interaction of K and L as now the actions of one agent affects the other so we have now joint self-interest at work so they will work together to benefit each other or they will work together to take equal market pain or loss. In other words now the conjunctural model M_C can optimally expand benefiting both K and L or it can optimally contract giving equal treatment to both K and L, without producing externalities affecting K or L, which means they win or lose together.

ii) The characteristics of the model

If the codependent optimality model M_C has "n" codependent characteristics defining it, their joint structure is as follows:

4) $C_C = C1.C2….Cn$

Expression 4) above shows the conjunctural state of all codependent characteristics (C_C).

The conjunctural optimality transformation theorem (TCOTT) a la Lucio Muñoz for the additive Pareto optimality model

If we subject the additive Pareto optimality model (M_L) to the conjunctural optimality transformation theorem (TCOTT), then it shifts to a conjunctural optimality based market structure (M_C), a situation summarized analytically as shown below:

Flip

5) TCOTT ($M_L = K + L$)…….> $M_C = KL$

Expression 5) above simply states that the result of subjecting additive optimality thinking such as $M_L = K + L$ to the conjunctural optimality transformation theorem (TCOTT) is conjunctural optimality thinking such as $M_C = KL$. In other words, there is a flip from additive Pareto optimality thinking to conjunctural Pareto optimality thinking, a shift from independent to codependent Pareto optimality thinking.

The conjunctural optimality transformation theorem (TCOTT) a la Lucio Muñoz for the characteristics of the model

If we subject the additive characteristics (C_L) of the Pareto optimality model (M_L) to the conjunctural optimality transformation theorem (TCOTT), then it shifts to a conjunctural characteristics based market structure (C_C), a situation indicated analytically as shown below:

Flip

6) TCOTT ($C_L = C1 + C2 + ….Cn$)…….> $C_C = C1.C2….Cn$

Expression 6) above simply tells us that the result of subjecting a set of additive characteristics such as $C_L = C1 + C2 +…..+ Cn$ to the conjunctural optimality transformation theorem (TCOTT) is conjunctural characteristics thinking such as $C_C = C1.C2…..Cn$. In other words, there is a flip from additive characteristic thinking to conjunctural characteristic thinking, a shift from independent to codependent characteristic thinking.

The case of traditional market Pareto optimality thinking

Below we apply the theory developed above to the case of traditional market Pareto optimality thinking a la Adam Smith (Smith 1776) still being used today:

i) The traditional Pareto optimality model (TPOM)

The structure of traditional Pareto optimality thinking where there is factor independency and there is an externality production neutrality assumption has been recently stated in simple analytical terms (Muñoz 2025) as stated below:

7) TPOM = A + B where AB = 0 = No codependency exists.

Expression 7 summarizes the basic aspects of traditional Pareto optimality thinking (TPOM): i) it is additive; ii) it assumes independent components and preferences; and iii) it assumes that the actions of components and preferences do not have an impact on the actions and preferences of the others. Hence, here linear allocation efficiency determines pareto optimality in a way that it can expand as much as it wants without producing externalities, if one benefits, it is assumed it does not harm the other when maximizing those benefits.

Notice that his externality neutrality assumption has been formally criticized and challenged twice with calls to move away from traditional economic thinking as usual: i) the first formal challenge was in 1987 (WCED 1987) when based on evidence of social and environmental pollution the world moved to leave traditional economic thinking behind by using sustainable development thinking; and ii) the second formal and more specific challenged came in 2012 Rio + 20 (UNCSD 2012a; UNCSD 2012b) when based on even more evidence of environmental decline the world moved to leave traditional market thinking behind by using dwarf green market thinking after intending and then avoiding the use of green market thinking.

ii) The characteristics of traditional Pareto optimality

The 8 main characteristics of additive traditional Pareto optimality were recently listed (Muñoz 2025) and they are the following: C1) Cost externalization; C2) Isolated state; C3) Linear causality; C4) Independent action; C5) Economic efficient optimum; C6) Independent welfare function; C7) Independent utility; and C8) Individual self-interest. Hence the characteristics model can be stated as:

8) TOPC = C_L = C1 + C2 +….+ C8

Expression 8) indicates that traditional Pareto optimality thinking has 8 main characteristics that define it.

The conjunctural optimality transformation theorem (TCOTT) a la Lucio Muñoz for the traditional market model

If we subject the additive traditional market Pareto optimality model (TPOM) to the conjunctural optimality transformation theorem (TCOTT), then it shifts to a conjunctural optimality based market structure (M_C), a situation summarized analytically as shown below:

Flip

9) TCOTT (TPOM = A + B)…….> M_C = AB

Expression 9) above simply states that the result of subjecting additive traditional market Pareto optimality thinking such as TPOM = A + B to the conjunctural optimality transformation theorem (TCOTT) is conjunctural optimality thinking such as M_C = AB. In other words, there is a flip from traditional additive Pareto optimality thinking to conjunctural Pareto optimality thinking, a shift from independent to codependent Pareto optimality thinking.

The conjunctural optimality transformation theorem (TCOTT) a la Lucio Muñoz for the characteristics of the traditional market model

If we subject the additive characteristics (C_L) of the traditional additive Pareto optimality model (TPOM) to the conjunctural optimality transformation theorem (TCOTT), then it shifts to a conjunctural characteristics based market structure (C_C), a situation indicated analytically as shown below:

Flip

10) TCOTT (C_L = C1 + C2 + ….C8)……..…….> C_C = C1.C2….C8

Expression 10) above simply highlights that the result of subjecting a set of 8 additive characteristics such as C_L = C1 + C2 +…..+ C8 to the conjunctural optimality transformation theorem (TCOTT) is conjunctural characteristics thinking such as C_C = C1.C2…..C8. In other words, there is a flip from additive characteristic thinking to conjunctural characteristic thinking, a shift from independent to codependent characteristic thinking. Hence, the 8 characteristics in conjunctural terms now after flipping are: C1) Cost internalization; C2) Joint state; C3) conjunctural causality; C4) codependent action; C5) conjunctural efficient optimum; C6) codependent welfare function; C7) codependent utility; and C8) conjunctural self-interest.

The structure of the shift in characteristics from traditional Pareto optimality to conjunctural Pareto optimality, leaving traditional linear thinking behind

A visual of the one to one conjunctural shift from traditional market optimality thinking to conjunctural optimality thinking in terms of characteristics leads to the following paradigm shift truth table:

Cost externalization----------→Cost internalization

Isolated state----------→ Joint state

Linear causality----------→ Conjunctural causality

Independent action----------→ Codependent action

Economic efficient optimum----------→ Conjunctural efficient optimum

Independent welfare function----------→ Codependent welfare function

Independent utilities----------→Codependent utilities

Individual self-interest----------→Conjunctural self-interest

Independent component----------→Codependent component

Main general implications

1) Subjecting the traditional linear optimality model to the conjunctural determinism theorem tool, shift it from individual component based choice model to a codependent based preference model; 2) The codependent optimality model is a superior form of optimality that that of traditional markets as conjunctural optimality internalize the externality obtaining that way a higher responsibility model status; 3) Subjecting the characteristics of the linear optimal model to the conjunctural determinism theorem tool shift the linearly based characteristics into codependent based characteristics; 4) The codependent optimality model has superior characteristics than the linear optimality model as they internalized the codependency in each linear characteristic; and therefore, 5) linear optimality models and their characteristics shift one to one to conjunctural optimality models and their characteristics when subjected to the

conjunctural optimality theorem, leaving that way traditional optimality thinking and its characteristics behind.

Main specific related implications

1) Linear optimality thinking is pollution production friendly because of its externality neutrality assumptions and hence, with no path to pollutionless markets, and this makes traditional markets pollution production markets (Muñoz 2023a); 2) Conjunctural optimality thinking is pollution reduction friendly, with path to pollution free markets such in the case of green markets (Muñoz 2023b); 3) The shift from linear optimality thinking to conjunctural optimality thinking is a science based shift that respects both the theory-practice consistency principle and the expectations of the Thomas Kuhn's scientific paradigm evolution loop as then the issue of externalities or abnormalities is removed (Muñoz 2022); and 4) A shift from conjunctural optimality thinking to linear optimality thinking would be a shift from higher system responsibility to lower system responsibility, a shift against scientific logic.

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