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Short Elucidating Note 101: Why is traditional Pareto optimality thinking inconsistent with conjunctural Pareto optimality thinking?

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Abstract

There is traditional Pareto optimality thinking and there is conjunctural Pareto optimality thinking a la Lucio Muñoz and the goal of this short note is to show how and why conjunctural causality thinking redefines optimality thinking beyond traditional optimality by simple answering the following question in simple terms: "Why is traditional Pareto optimality thinking inconsistent with conjunctural Pareto optimality thinking? This resulting Pareto optimality knowledge goes one to one with the nature of possible higher level responsibility based paradigms.

Key concepts

Traditional Pareto optimality thinking, Conjunctural optimality thinking, Dominant component specific based Pareto optimality, Conjunctural component based Pareto optimality, Linear optimality, Conjunctural optimality

Traditional optimality thinking determinism in simple terms

a) The meaning of traditional Pareto optimality

It can be said that the classic definition of Pareto efficiency/optimality relates to doing better while not making others worse off. In other words, it is the allocation efficiency where no agent can be made worse off without making someone else better off.

b) The nature of the definition

The definition is consistent only with additive thinking and factor separability assumptions, which normally work only in one component dominant based systems such as the traditional market where only the economy matters, but this thinking could also be applied to society only and environment only based system thinking in a parallel fashion.

c) The independent state is central in traditional Pareto optimality thinking

Below it is described in simple terms how traditional Pareto optimality thinking works when applied to one system optimality thinking and to one system independent choice thinking using qualitative comparative means and system variability truth table employing the following statements as context:

c1) The case of Pareto optimality thinking from the independent system's component point of view

If we have a two components based system A and B such as X = A + B, where A = Dominant component A, a = Dominated component A, B = Dominant component B, b = Dominated component B; and where we have a two components based system A and B, where A = 1 = when present in dominant form, a = 0 = when absent in dominant form, B = 1 = when present in dominant form, b = 0 = when absent in dominant form; then we can create independent component based truth tables as guides as indicated in table 1 below:

TABLE 1

Truth table based on system components and type of dominance present for system X

Under independent assumptions and externality neutrality assumptions and coding

Condition	Factors		Factor coding		State
	A	B	A	B	
P_A	A	b	1	0	IS_A
P_B	a	B	0	1	IS_B

P_{AB}	**a**	**b**	**0**	**0**	**$IS_{AB} = 0$**

We can see based on Table 1 above the following: i) The independent state of component A = IS_A = (A, b) = (1, 0); ii) The independent state of component B = IS_B = (a, B) = (0, 1); and iii) the independent state of joint components IS_{AB} = (a,b) = (0,0) = 0 as codependency does not exists as in this world component A or component B can achieve maximization and Pareto optimality without affecting each other due to the externality production neutrality assumption. Hence, independent component states are component based Pareto optimality consistent and they are in the diagonal of number 1s in Table 1 above. Notice that the independent state of the joint components IS_{AB} = 0 as component codependence does not exist in this world.

c2) The case of Pareto optimality thinking from the independent choice/preference point of view

If we have a two preference/choice based system C_A and C_B such as X = C_A + C_B, where C_A = Dominant preference A, C_a = Dominated preference A, C_B = Dominant preference B, C_b = Dominated preference B; and where we have a two preference/choice based system C_A and CB, where C_A = 1 = when present in dominant form, C_a = 0 = when absent in dominant form, C_B = 1 = when present in dominant form, C_b = 0 = when absent in dominant form; then we can create independent preference/choice based truth tables as guides as shown in Table 2 below:

TABLE 2

Truth table based on system preferences and type of dominance present for system X

Under independent assumptions and externality neutrality assumptions and coding

Condition	**Factors**		**Factor coding**		**State**
	A	**B**	**A**	**B**	
PC_A	**C_A**	**C_b**	**1**	**0**	**ISC_A**
PC_B	**C_a**	**C_B**	**0**	**1**	**ISC_B**

PC_{AB}	**C_a**	**C_b**	**0**	**0**	**$ISC_{AB} = 0$**

We can appreciate based on Table 2 above the following aspects: i) The independent choice state of factor A = $ICS_A = (C_A, C_b) = (1, 0)$; ii) The independent choice state of factor B = $ICS_B = (C_a, C_B) = (0, 1)$; and iii) the independent choice state of joint factors $IC_{AB} = (C_a, C_b) = (0,0) = 0$ as codependency does not exists as choice C_A or choice C_B can achieve maximization and pareto optimality without affecting each other due to the externality production neutrality assumption. Hence, independent choice/preference states are component based pareto optimality consistent and they are in the diagonal of number 1s in Table 2 above. Notice that the independent choice $IC_{AB} = 0$ as preference/choice codependence does not exist in this world.

d) The implications

The following implications are supported by the information in Table 1 and Table 2 above: 1) Externalities fall outside traditional pareto optimality thinking; 2) Pareto optimality reflect an isolated, linear causality as pareto optimality exist if the condition of optimal efficient economic allocation exist; 3) Hence, the system is linear and optimality is achieved, given constraints, when resources are allocated efficiently; 4) this leads to a world where the welfare or utility of one agent is independent from that of others except through market dynamics; and 5) therefore, traditional pareto optimality determinism is isolated as it is purely based on economic efficiency grounds only. In summary, traditional Pareto optimality is about the *best possible economic allocation* of resources **given constraints** or economic efficiency optimum.

Conjunctural Optimality determinism a la Lucio Muñoz

a) The meaning of conjunctural Pareto optimality

In Lucio Muñoz's conjunctural determinism world, a state is Pareto optimal *only when* the necessary and sufficient conjunctural conditions are present and coexist harmoniously and non-contradictorily. And this means that systems are causality interconnected and outcomes are determined by the joint presence of necessary and sufficient conditions or conjunctural states, not by single variable linearity.

b) The nature of the definition

The conjunctural pareto optimality definition then is integrative and conditional, not based on single variable dynamics, but on codependent states.

c) The codependent state is central in conjunctural Pareto optimality thinking

c1) The case of conjunctural Pareto optimality thinking from the codependent component point of view

If we have a two components based system A and B such as X = A + B, where A = Dominant component A, a = Dominated component A, B = Dominant component B, b = Dominated component B; and where we have a two components based system A and B, where A = 1 = when present in dominant form, a = 0 = when absent in dominant form, B = 1 = when present in dominant form, b = 0 = when absent in dominant form; then we can create codependent component based truth tables as guides as indicated in table 3 below:

TABLE 3

Truth table based on system components and type of dominance present for system X

Under codependent assumptions and NO externality neutrality assumptions

Condition	Factors		Factor coding		State
	A	B	A	B	
P_A	a	b	0	0	$COS_A = 0$
P_B	a	b	0	0	$COS_B = 0$
P_{AB}	A	B	1	1	COS_{AB}

We can state based on Table 3 above the following details: i) The codependent state of component A = COS_A = (a, b) = (0, 0) = 0 as they fall outside the codependency model; ii) The codependent state of component B = COS_B = (a, b) = (0, 0) = 0 as they fall outside codependent thinking; and iii) the codependent state of the conjunctural components AB = COS_{AB} = (A,B) = (1,1) as codependency do exists as component A and component B can achieve conjunctural optimization and conjunctural pareto optimality as they both win or lose if they act together, and

they will act together due to joint component self-interest. Hence, codependent component states are codependent pareto optimality consistent and they are as number 1 in Table 3 above. Notice that self-interest do not exist here reason why the codependent state of component A and component B is zero so that $COS_A = COS_B = 0$. In other words, component independence does not exist in this conjunctural causality world.

c2) The case of conjunctural Pareto optimality thinking from the codependent choice/preference point of view

If we have a two preference/choice based system C_A and C_B such as $X = C_A + C_B$, where C_A = Dominant preference A, C_a = Dominated preference A, C_B = Dominant preference B, C_b = Dominated preference B; and where we have a two preference/choice based system C_A and C_B, where C_A = 1 = when present in dominant form, $C_a = 0$ = when absent in dominant form, $C_B = 1$ = when present in dominant form, $C_b = 0$ = when absent in dominant form; then we can create codependent preference/choice based truth tables as guides as shown in Table 4 below:

TABLE 4

Truth table based on system preferences and type of dominance present for system X

Under codependent assumptions and NO externality neutrality assumptions

Condition	Factors		Factor coding		State
	A	B	A	B	
PC_A	C_a	C_b	0	0	$COSC_A = 0$
PC_B	C_a	C_b	0	0	$COSC_B = 0$
PC_{AB}	C_A	C_B	1	1	$COSC_{AB}$

We can indicate based on Table 4 above the following things: i) The codependent state of preference A = $COSC_A$ = (C_a, C_b) = (0, 0) = 0 as they fall outside the codependency model; ii) The codependent state of preference B = $COSC_B$ = (C_a, C_b) = (0, 0) = 0 as they fall outside codependent thinking; and iii) the codependent state of conjunctural preferences AB = $COSC_{AB}$ = (C_A,C_B) = (1,1) as codependency do exists as preference C_A and preference C_B can achieve conjunctural optimization and conjunctural pareto optimality as they win or lose acting together; and they will act together due to joint preference self-interest. Hence, codependent preference states are codependent Pareto optimality consistent and they are as number 1 in Table 4 above. Notice that self-interest do not exist here too reason why the codependent state of preference C_A and codependent state of preference C_B is zero so that $COSC_A$ = $COSC_B$ = 0. In other words, choice/preference independence does not exist in this conjunctural world.

d) The implications

The following implications are supported by the information in Table 3 and Table 4 above: 1) Externalities fall inside conjunctural pareto optimality thinking; 2) Conjunctural Pareto optimality reflect an integrated, conditional causality as conjunctural pareto optimality exist if the conjunctural condition of conjunctural optimal efficient allocation exist; 3) Hence, the system is joint and conjunctural optimality is achieved, given constraints, when resources are conjuncturally allocated efficiently; 4) this leads to a world where the codependent welfare or codependent utility of one agent is codepenedent from that of others even through market dynamics; and 5) therefore, conjunctural pareto optimality determinism is integrative as it is based on codependent efficiency grounds. In summary, conjunctural Pareto optimality is about the *best possible conjuncture where all conjunctural conditions are satisfied simultaneously.*

The shift from traditional pareto optimality thinking to conjunctural pareto optimality thinking

The shift from traditional pareto optimality thinking to conjunctural pareto optimality thinking(specially to be consistent with Thomas Kuhn's scientific paradigm evolution loop expectations) requires the following aspects: 1) a shift from additive/linear causality to conjunctural/systemic causality; 2) a shift from independent and separable conditions to joint and interdependent conditions; 3) a shift in focus from efficiency allocations to compatibility of conjunctural conditions; 4) a shift from ignoring externalities or make then exogenous to the traditional pareto optimality model to accept they are real and need to be fully internalized; 5) a shift from the temporal nature of the model from linear equilibrium under linear determinism to conjunctural equilibrium under conjunctural determinism; and 6) a shift in the real meaning of optimality from specific component optimality or lower level responsibility market optimality like in the case of economic optimality to specific system optimality like higher responsibility market optimality like green market optimality, red market optimality, and sustainability market optimality. The idea of the unity of sustainability through conjunctural optimality(Muñoz 2025a), the idea of component specific component optimality in terms of lifestyles (Muñoz 2025b) and in terms of production units(Muñoz 2025c), and the idea that lack of conjunctural

optimality is the limiting factor in traditional economic thinking(Muñoz 2025d) and the idea that all optimal points of markets including the traditional market have a place on the pareto optimality sustainability line in a way that respects Thomas Kuhn's paradigm evolution loop expectations and the theory-practice consistency principle (Muñoz 2021) have recently been shared,

General implication

i) Traditional Pareto optimality thinking is not consistent conjunctural optimality thinking because it is additive assuming component independency and assuming externality production neutrality, and this fact applies to both linear and circular traditional economic thinking; ii) Conjunctural Pareto optimality thinking is systematic, assuming component codependency and no externality production neutrality; iii) The shift from independent state or traditional pareto optimality thinking to codependent state or conjunctural pareto optimality thinking and vise a vise requires either externality internalization strategies or externality externalization strategies for different pareto optimality way of thinking to hold, but iv) Only the shift from independent or traditional pareto optimality to codependent state or conjunctural pareto optimality is consistent with Thomas Kuhn's scientific paradigm evolution loop expectations as only then abnormalities in the previous paradigm are fully removed; and hence, conjunctural optimality thinking redefines and expands optimality thinking to higher level paradigms beyond traditional optimality thinking; and therefore, v) traditional pareto optimality thinking is inconsistent with conjunctural pareto optimality thinking as one is specific component based/isolated and the other is system based and integrative.

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