

Short Elucidating Note 131: Placing the structural falsification theory ($K_i = L_j$), the relational structuralism theory, and the theory of everything within the conjunctural structuralism theorem: What are the main implications of doing this?

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Abstract

It can be said that there are different ways to rationalize, understand, and address structural concerns. For example, relational structuralism cares about the question, what relations exist? Central rule structuralism like the theory of everything is concerned about the question, what common factor explains everything? And conjunctural structuralism like the structural falsification theorem ($K_i = L_j$) seeks answer to the question, which relations must coexist simultaneously for existence/reproduction to occur? The examples above tell us that there are then non-conjunctural and conjunctural forms of structuralism, and hence the ideas of structuralism can be seen as an enveloping idea under which you find viable non-conjunctural structuralism and conjunctural structuralism. Since relaxing the conjunctural coexistence requirement generates non-conjunctural structuralism, then non-conjunctural structuralism ideas (e.g. relational structuralism and the theory of everything based structuralism), can be seen as special cases of conjunctural structuralism (e.g. the structural falsification theorem $K_i = L_j$), which indicates that this paper is about structural nesting, not about competition among different structural theories. And therefore, the main goal of this paper is to place the structural falsification theory ($K_i = L_j$), the relational structuralism theory and the theory of everything within the conjunctural structuralism theorem and highlight the main implications of doing this.

Goals of this paper

This paper has three goals: 1) To point out the structuralism envelop; 2) To stress the conjunctural structuralism envelop; and 3) To highlight relevant implications related to the ideas addressed above.

Methodology

First the terminology used in this paper is listed. Second, the types of possible structuralism are defined. Third, structuralism is divided in terms of conjuncturality. Fourth, the

functional properties of each type of structuralism are stressed. Fifth, the nature of the structuralism envelop is highlighted. Sixth, the nature of conjunctural structuralism envelop is pointed out. Seventh, all types of structuralism are placed in the conjunctural structuralism envelop. Eighth, relational and central rule structuralism as special conjunctural cases are introduced. Ninth, the idea of structuralism under binding dynamic sustainability gap accumulation pressures and long-term collapse is introduced. Tenth, a list of implications and conclusions are provided.

Terminology

K_i = Component K type “i”

L_j = Component L type “j”

$K_i = L_j$ = the conjunctural balance to be respected

SG = Sustainability gap

CRT = Critical threshold

STF = Structural falsification theorem CRS = Central rule structuralism

ToE = Theory of everything

RS = Relational structuralism

CS = Conjunctural structuralism

NCS = Non-conjunctural structuralism

SEV = Structuralism envelop

CSEV = Conjunctural structuralism envelop

Types of structuralism

It can be said that there are different forms of structuralism such as conjunctural structuralism (CS), relational structuralism (RS), and central rule based structuralism (CRS) or theory of everything (ToE). Conjunctural structuralism (CS) is concerned with the question: which relations must exist at the same time to preserve existence? Relational structuralism (RS) is concerned with the question: what relations exist in the system? And central rule based structuralism (CRS) is focused on the question: what common rule exists that explains everything? In other words, relational approaches look for relations, theory of everything approaches are seeking a universal principle, and conjunctural approaches search for the minimum admissible structure required for existence or reproduction.

Types of structuralism in terms of conjuncturality

In terms of conjuncturality there are two types of structuralism, conjunctural structuralism (CS) and non-conjunctural structuralism (NCS). Conjunctural structuralism (CS) requires full conjunctural reproduction to exist so there are no sustainability gaps ($SG = 0$) while non-conjunctural structuralism (NCS) requires partial reproduction to exist so it operates under

sustainability gaps (SG) within a critical boundary (CRT) so that $(0 < SG \leq CRT)$. And this means that in conjunctural structuralism (CS) existence and reproduction coincide so $SG = 0$ and the structure is viable. In non-conjunctural approaches (NCS), relational or central rule based, existence and reproduction partially coincide so that $SG > 0$ and the structures are then partially viable. In other words, i) Conjunctural structuralism (CS) exist under no sustainability gap pressures/full viability as it exists under conjunctural reproduction; ii) A relation may exist, but under sustainability gap pressures/partial viability as it exists under non-conjunctural reproduction; and iii) A central rule may exist, but under sustainability gap pressures/partial viability as it exists under non-conjunctural reproduction.

Structuralism and its functional properties

Different types of structuralism have different functional properties as methodological tools that define their nature as indicated below:

1) The case of conjunctural structuralism

Conjunctural structuralism (CS) acts as carrier of compatibility, as organizer of admissibility; as connector of domains; and as detector of structural incompleteness since missing a conjunct immediately signals structural failure. This is because conjunctural structuralism (CS) requires successful reproduction. The idea of the structural falsification theorem is based on full conjunctural structuralism (Muñoz 2026). And the above means in terms of completeness:

CS → Full structural existence and reproduction

Hence, CS captures the structure of components fully.

2) The case of relational structuralism

Relational structuralism (RS) acts as carrier of partial relational compatibility, as organizer of partial relational admissibility, as the connector of partial relational domains, and as indicator of partial relational structural incompleteness. Relational structuralism (RS) requires only successful observation of relations to be viable so it is incomplete in terms of reproduction requirements. Therefore, at the core of the relational based structuralism (RS) is the thought that everything can be explained simply through the existence of relationships. The use of relational structuralism is widely spread (Bailey 2026, Ferrari 2021). And the above means in terms of completeness:

RS → Partial relational structural existence and reproduction

Hence, RS captures structure of relations partially.

3) The case of central rule based structuralism

Central rule based structuralism (CRS) acts as carrier of partial common rule structural compatibility, as organizer of partial common rule admissibility, as connector of partial common rule domains, and as indicator of partial common rule structural incompleteness. This is because central-rule structuralism (CRS) requires only successful observation of a common rule, and therefore, it is incomplete in terms of reproduction requirements. The quest of the theory of everything is in full force (Goyal 2025; Josephson 2015). Hence, at the core of the central rule based structuralism (CRS) is the thought that everything can be explained simply by the same rules, as common average or individual rules. And the above means:

CRS → Partial central rule structural existence and reproduction

Hence, CRS captures structure of central rules partially.

The structuralism envelop (SEV)

As indicated above the concept of structuralism nests the ideas of conjunctural structuralism (CS) and the idea of non-conjunctural structuralism (NCS), both valid ideas within their domain range under the same structuralism umbrella. In other words, the structuralism envelop (SEV) contains both conjunctural structuralism (CS) and non-conjunctural structuralism (NCS).

The conjunctural structuralism envelop (CSEV)

Conjuncturality can be seen as going from 0 to 1, when conjuncturality is zero then the sustainability gap is infinity ($SG = \infty$), when conjuncturality is equal to 1, then the sustainability gap is zero ($SG = 0$), and when conjuncturality is partial, then the bounded sustainability gap is greater than zero and less than 1 so that $0 < SG < CRT < 1$. Therefore, the structures of the conjunctural structuralism envelop (CSEV) has the following 3 levels nesting structure:

1) The case of full structural conjuncturality

Full structural conjuncturality → $SG = 0$ → full viability

The expression above highlights that full viability flows from the existence of full structural conjuncturality.

2) The case of partial structural conjuncturality

Partial structural conjuncturality → $0 < SG \leq CRT$ → partial viability

The expression above indicates that partial viability flows from the existence of partial structural conjuncturality.

3) The case of full non-structural conjuncturality

Full non-structural conjuncturality → $SG = \infty$ → Full invalidity

The expression above tells us that full invalidity flows from the existence of full non-structural conjuncturality.

Hence, the conjunctural structuralisms envelop (CSEV) captures the 3 possible states of structurality: Full existence structurality, partial existence structurality under sustainability gaps pressures, and fully non-existent structurality.

It is important to highlight that the structuralism discussed above is conjunctural in nature, as it focuses on structures formed by combinations of conditions and on the admissibility relationships among those structures. However, structuralism can also be approached from a non-conjunctural perspective. In that case, the objective is not to identify outcome-generating conjunctions but rather to identify common structures/relations, common rules/relations, or common organizing principles underlying observed natural and relational phenomena. In other words, different forms of universalism can be identified: i) traditional average-based universalism, which searches for common average rules/relations; ii) structural/relational universalism, which searches for common underlying structures/relations and organizing principles; and iii) conjunctural structural universalism (CSEV), which searches for common structural rules/relations governing combinations of conditions and their admissible nesting relationships. Hence, these forms of universalism need not be viewed as competing representations of reality. Rather, they can be viewed as different approaches to identifying commonality, each operating at a different level of structural observation and therefore possessing a different admissibility domain.

Placing all types of structuralism in the conjunctural structuralism envelop (CSEV)

Nesting the structural falsification theory (SFT) $K_i = L_j$, the relational structuralism theory (RS) and the central rule based (CRS) or theory of everything theory can be done as indicated below:

i) The case of the structural falsification theory (SFT) based structuralism ($K_i = L_j$)

The case of the structural falsification theorem (SFT) $K_i = L_j$ is one of full conjuncturality as it requires that the conjunctural balance $K_i = L_j$ must be respected when under external pressures (e.g. maximization, optimization, degrowth) so that:

Structural falsification theorem $\rightarrow$ Full structural conjuncturality $\rightarrow SG = 0 \rightarrow$ full viability

Full viability flows from the structural falsification theory, full viability in terms of conjunctural state and conjunctural components existence.

ii) The case of relational structuralism

The case of relational structuralism is one of partial viability as relations exist under bounded sustainability gap pressures of the form $0 < SG \leq CRT$ so that:

Relational structuralism $\rightarrow$ Partial structural conjuncturality $\rightarrow 0 < SG \leq CRT \rightarrow$ partial viability

Partial viability flows from relational structuralism theory, partial viability in terms of non-conjunctural state and of non-conjunctural relations existence.

iii) The case of central rule based structuralism

The case of central rule based structuralism is one of partial viability too as common rules exist under bounded sustainability gap pressures of the form $0 < SG \leq CRT$ so that:

Central rule based structuralism $\rightarrow$ Partial structural conjuncturality $\rightarrow 0 < SG \leq CRT \rightarrow$ partial viability

Partial viability flows from central rule based structuralism theory, partial viability in terms of non-conjunctural state and common driver existence.

Relational and central rule based structuralism as special conjunctural cases

If we relax the full structural conjuncturality requirement we have partial viability so that:

Relaxed

Full structural conjuncturality $\rightarrow SG = 0 \rightarrow$ full viability----- $\rightarrow$ Partial conjuncturality $\rightarrow 0 < SG \leq CRT \rightarrow$ partial viability

So that:

Relaxed

Full conjunctural requirements----- $\rightarrow$ Partial conjuncturality requirements

Since both relational and central rule based structuralism have bounded sustainability gaps and partial viability of the form $0 < SG \leq CRT \rightarrow$ partial viability as shown above, then:

Relaxed

Full structural conjuncturality $\rightarrow SG = 0 \rightarrow$ full viability----- $\rightarrow$ Relational structuralism and central rule based structuralism $\rightarrow$ partial viability

And this means:

Relaxed

Full conjunctural requirements----- $\rightarrow$ Relational structuralism and central rule based structuralism $\rightarrow$ partial viability

And therefore, relational structuralism and central rule based structuralism can be seen as special conjunctural structuralism cases coming about as the result of relaxing conjunctural structural reproduction and existence requirements from full viability to partial viability.

Hence, the conjunctural structuralism framework (CSEV) described above is about structural nesting and admissibility in conjunctural structuralism, not about domain competition.

The idea of structuralism under binding dynamic sustainability gap accumulation pressures and collapse

When sustainability gaps pressures (SG) accumulate in the long-term and becomes binding then partial viability or partial conjunctural structuralism tends towards full unsustainability and collapse so that:

**Binding
Pressure**

Partial structural conjuncturality $\rightarrow 0 < SG \leq CRT \rightarrow$ partial viability----- $\rightarrow$ Full non-structural conjuncturality $\rightarrow SG = \infty \rightarrow$ Full invalidity

□

And this means that relational structuralism and central rule based structuralism under binding sustainability gap pressures would tend towards full collapse as their bounded sustainability gap would tend towards infinity so that:

Binding pressures

$0 < SG \leq CRT \rightarrow$ partial viability----- $\rightarrow SG = \infty \rightarrow$ Full invalidity

The expression above tells us that full invalidity flows from partial viability under binding sustainability gap pressures.

List of implications

1) If the conjunctural structuralism rule ($SG = 0$) is relaxed, then partial viability exist ($0 < SG \leq CRT$) so then relational structuralism and common rule structuralism can exist under sustainability gap pressures and a critical boundary.

2) Conjunctural structuralism is the most restrictive structural framework because it requires simultaneous coexistence conditions for reproduction.

3) Relational structuralism and theory-of-everything structuralism emerge as admissible special cases of conjunctural structuralism.

4) The structural falsification theorem $K_i = L_j$ operates within that envelop framework as full viability as well as the relational structuralism framework and the central rule based structuralism framework do, but both relational and central rule based structuralism frameworks operate under partial viability under bounded sustainability gap pressures;

5) Relational structuralism and central rule based structuralism belong then inside the admissibility domain of the structural falsification theorem when the full conjunctural structuralism requirement is relaxed so they can exist and operate under bounded sustainability gaps $0 < SG \leq CRT$. And this means that non-conjunctural structuralism can remain descriptively successful while becoming reproductively incomplete; and therefore, they may correctly identify relations and common rules, yet still fail to identify approaching structural collapse because reproduction conditions are not their primary object of analysis.

6) And the discussion above indicates that the structural falsification theorem then becomes an enveloping framework that says: your relation or your central rule may be valid, but

their long-run admissibility depends on whether the conjunctural conditions for reproduction remain satisfied.

7) However, as each approach captures a different level of structural reasoning, each approach has a legitimate domain of applicability, and conjunctural structuralism provides the broader admissibility space within which the others can be located.

In summary, relational structuralism identifies relations; the theory-of-everything structuralism or central rule based structuralism identifies common drivers. But neither necessarily specifies the full set of conditions that must coexist for reproduction or persistence. The structural falsification framework $K_i = L_j$ on the other hands is concerned about which conditions must simultaneously hold for the system to exist or reproduce and set those existence and reproduction requirements. And when this full existence and full reproduction requirements are relaxed, then the space for partial viability and hence for relational structuralism and central rule based structuralism to operate is created or emerges.

Conclusions

First, this paper introduced the idea that structuralism can be viewed as an enveloping framework containing different admissible forms of structural reasoning. Within that framework, two broad classes of structuralism were identified: conjunctural structuralism and non-conjunctural structuralism. Conjunctural structuralism focuses on the simultaneous coexistence of the conditions required for existence and reproduction, whereas non-conjunctural structuralism focuses on either the existence of relations or the existence of common explanatory rules. Second, the paper showed that the structuralism envelope (SEV) contains both conjunctural and non-conjunctural approaches, while the conjunctural structuralism envelope (CSEV) provides a broader admissibility structure capable of nesting all structural forms according to their degree of conjuncturality and viability. Third, it was pointed out that under this conjunctural structuralism envelop framework (CSEV), the structural falsification theorem ($K_i = L_j$) represents the case of full conjuncturality and full viability, whereas relational structuralism and central-rule or theory-of-everything structuralism represent cases of partial conjuncturality and partial viability operating under bounded sustainability-gap pressures. Fourth, the analysis also demonstrated that relational structuralism and central-rule structuralism can be interpreted as special conjunctural cases generated through the relaxation of full reproduction requirements. Consequently, the relationship among these approaches is not one of theoretical competition but one of structural nesting and admissibility. Fifth, it was highlighted that each structuralism approach captures a different level of structural reasoning and therefore possesses a legitimate domain of applicability. And finally sixth, the paper highlighted the following i) that when sustainability-gap pressures accumulate and become binding, partial viability tends toward full invalidity; ii) that under those conditions, relational structuralism and central-rule structuralism may remain descriptively successful while becoming reproductively incomplete, since they are not primarily designed to identify the complete set of conjunctural conditions required for persistence and reproduction; iii) that in this sense, the structural falsification theorem ($K_i = L_j$) functions as an enveloping admissibility framework capable of locating the valid domain,

limitations, and long-run sustainability implications of alternative structural approaches; and therefore, iv) the principal contribution of this paper is to show that conjunctural structuralism provides a common admissibility space within which relational structuralism, theory-of-everything structuralism, and the structural falsification theorem can be understood as nested rather than competing approaches to structural analysis.

In general, it was indicated that a) structuralism is not a collection of competing theories but an organized hierarchy of admissible structural approaches, with conjunctural structuralism providing the broadest admissibility framework; b) That relational structuralism and theory-of-everything structuralism become admissible special cases of conjunctural structuralism when full reproduction requirements are relaxed; c) That the structural falsification theorem ($K_i = L_j$) becomes an enveloping admissibility framework rather than merely another structural theory; d) that non-conjunctural structuralisms may remain descriptively successful while becoming reproductively incomplete under sustainability-gap accumulation pressures; e) that the relationship between the structural falsification theorem ($K_i = L_j$), relational structuralism, and theory-of-everything structuralism as stressed here is one of nesting and admissibility rather than competition; and therefore, consistent with the above f) it can be said that conjunctural structuralism is presented in this paper as an admissibility framework capable of nesting relational structuralism, theory-of-everything structuralism, and the structural falsification theorem within a single hierarchy of structural reasoning.

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