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Paraconsistent Logic and Its Place in Latin American Philosophy

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Abstract. This study presents an overview of paraconsistent logic, tracing its historical origins and development within what may be referred to as the Latin American school of paraconsistency. This characterization is admittedly bold, given the diverse theoretical roots of paraconsistency and the contested nature of its interpretation. Accordingly, our discussion addresses the topic from both historical and formal perspectives, emphasizing key moments in the development of paraconsistent logic within the Latin American context. Particular attention is given to the extensive and systematic work of Newton C.A. da Costa in Brazil, whose contributions played a central role in shaping paraconsistent logic as a mature and influential field. In addition, we briefly explore how paraconsistent logic challenges classical logic to reconsider its conclusions in light of paraconsistent principles. Ultimately, this paper seeks to situate paraconsistency within the broader context outlined above, examining its impact and identifying its key theoretical and practical features in contemporary philosophical thought.

Keywords: paraconsistency, contradiction, triviality, Brazilian school of paraconsistency

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Параконсистентная логика и ее место в латиноамериканской философии

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Аннотация. В исследовании представлен обзор параконсистентной логики, прослеживается ее историческое происхождение и развитие в рамках того, что можно назвать латиноамериканской школой параконсистентности. Такая характеристика, по общему признанию, является смелой, учитывая различные теоретические корни параконсистентности и спорный характер ее интерпретации. Соответственно, в нашем обсуждении эта тема рассматривается как с исторической, так и с формальной точек зрения, подчеркивая ключевые моменты в развитии параконсистентной логики в латиноамериканском контексте. Особое внимание уделяется обширной и систематической работе Ньютона К.А. да Косты в Бразилии, чей вклад сыграл центральную роль в формировании параконсистентной логики как зрелой и влиятельной области знаний. Кроме того, мы кратко рассмотрим, как параконсистентная логика бросает вызов классической логике, заставляя ее пересмотреть свои выводы в свете параконсистентных принципов. В конечном счете эта статья направлена на то, чтобы поместить параконсистентность в более широкий контекст, описанный выше, исследуя ее влияние и выявляя ее ключевые теоретические и практические особенности в современной философской мысли.

Ключевые слова: параконсистентность, противоречие, тривиальность, бразильская школа параконсистентности, латиноамериканская философия

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Introduction

The year 2025 marks two centuries since the wave of independence movements that swept across Latin America between 1809 and 1825. These events, closely linked to the practical outcomes of the Enlightenment – particularly the French Revolution and the Napoleonic Wars – led to the fall of the Iberian empires of Portugal and Spain in America and, subsequently, to the liberation of nearly all

continental Latin America from direct European rule. However, political independence did not immediately translate into intellectual autonomy. In fact, the first institutionalized philosophy in Latin America remained deeply European in character, manifesting primarily as positivism – a framework that upheld the authority of science and classical logic in determining what was permissible and what was not.

It is, therefore, no surprise that in the twentieth century, paraconsistent logic emerged as a form of intellectual rebellion against classical logic. It gave structure to contradictions and illuminated the complexity of a diverse and dynamic philosophical landscape – a mosaic of thought that reflects the multifaceted identity of Latin America.

The term *paraconsistent* itself was coined within Latin America, by the Peruvian philosopher Francisco Miró Quesada. He introduced it at the Third Latin American Conference on Mathematical Logic, held at the University of Campinas, Brazil, in 1976 [1. P. 11]. The prefix "para*"* is generally understood to mean *quasi* or *at the side of consistency*, suggesting that this form of logic operates alongside or near consistency, rather than directly opposing it. Crucially, as stated below (Section 2), it limits the inferential explosion typical of classical logic by allowing contradictions to exist without collapsing the system into triviality. An alternative term, *metaconsistent*, was also considered, but ultimately rejected – after correspondence with Newton Carneiro Affonso da Costa – because the prefix "meta*"* might imply an extension that could indicate the replacement of classical logic, rather than a fundamental restructuring of its principles. Da Costa, the pioneer of formal paraconsistent logic, understood from the outset the uniqueness of his theory. He also championed the development of a distinctively Latin American philosophical voice, advocating for the advancement of research and education in logic and related disciplines.

Paraconsistent logic has thus emerged as a unifying and distinctive element among many Latin American logicians. But what is paraconsistent logic? For now, we may offer a preliminary, informal characterization (see Section 2). Paraconsistent logic is a non-classical logical system that enables reasoning within inconsistent frameworks without yielding triviality – in contrast to classical logic, where a single contradiction can render all statements derivable. In this way, even inconsistent theories can be systematically and meaningfully analyzed, rather than being dismissed as incoherent or irrelevant.

The development of paraconsistent logic in Latin America represents more than a technical achievement in formal reasoning; it stands as a powerful symbol of intellectual independence that clashes with epistemic colonialism in a region historically shaped by deep social, cultural, and political contradictions. While paraconsistent logic has roots and influences from various parts of the world, its distinctive evolution[1] and flourishing in Latin America affirm the possibility – and

[1] Any attempt to make a historical survey of paraconsistency would always be partial due to its widespread influence and ramifications worldwide. For a concise enterprise on the matter centered in the figure of Newton C. A. da Costa, see the incomparable work of [2].

the necessity – of non-Eurocentric philosophical traditions that derive their legitimacy from their own particular contexts and innovations.

In the following pages, we offer an overview of paraconsistent logic: what it is, how it works, and how it has been developed. Our broader aim, however, is to show how paraconsistent logic exemplifies the type of philosophical originality that contributes to the uniqueness of Latin American thought. Section 1 introduces the core motivations and conceptual foundations of paraconsistency. Section 2 presents a simplified formal account of the principal theoretical framework. Section 3 provides a historical and conceptual comparison between paraconsistent logic and related approaches such as dialetheism. Section 4 examines how paraconsistent logic – particularly as developed by the Brazilian school of paraconsistency – has influenced Latin American philosophy and how it has been interpreted across different logical traditions.

Motivations

Contradictions may seem undesirable, yet philosophers throughout history have been persistently drawn to them. From Heraclitus – who saw contradiction as the driving force behind change and movement [2. P. 52] – to Hegel, contradictions have been regarded as real and essential to understanding reality. Contrary to Kant's view that logic was a completed discipline, Hegel reintroduced contradictions into philosophical thought through the concept of antinomies. Since thought itself is refined through logic, it was only a matter of time before contradiction would be formally integrated into logical systems [1. P. 4].

In fact, the development of mathematics and logic during the nineteenth and twentieth centuries introduced a range of paradoxes that could not be addressed within the boundaries of classical logic. As a result, the emergence of non-classical logics became inevitable[2].

Following the revolutionary formalization of first-order logic by Frege, logic was centered as a privileged path of investigation. In this context, alternatives to classical logic began to emerge – first as conceptual explorations, and soon thereafter as rigorously formal systems.

In Eastern Europe, both Jan Łukasiewicz (in 1910) [3] and Nicolai I. Vasiliev (in 1911) [4] proposed the idea of a non-Aristotelian logic – one that would dispense with the law of non-contradiction (also known as the principle of contradiction). In Poland, Łukasiewicz explored this notion by suggesting a logic capable of accommodating contradictions, particularly in relation to issues such as logical paradoxes and Meinong's theory of objects. This work eventually laid the groundwork for his later development of many-valued logics. In Russia, Vasiliev advocated for a non-Aristotelian mode of reasoning by explicitly rejecting the law of non-contradiction. He proposed an *imaginary logic* capable of dealing with contradictory situations, which he believed were conceivable only within the human

[2] Antinomies and paradoxes may be approached through formal assessments from different paraconsistent logics [1].

mind. Despite these early advances, neither thinker offered a formal logical system that embodied their respective visions of paraconsistency.

The challenge thus remained unresolved – until 1948, when a formal system of paraconsistent logic was first developed. Jaśkowski introduced his *discursive logics*, aimed at addressing dialectical reasoning, vagueness, and contradiction [5]. However, this system was only formalized at the propositional level. Unaware of Jaśkowski's work, da Costa in Brazil began, in 1958 [6], a groundbreaking and sustained effort in the development of paraconsistent logic, resulting in continuous innovations and substantial theoretical advancements [7].

Widely recognized as the scholar who formally defined and founded paraconsistent logic, da Costa promoted the intellectual independence and originality of Latin American philosophy on the global stage. Initially, paraconsistency was applied to clarify certain problems in mathematics and set theory [8. P. 694–708]. However, da Costa soon extended its scope to a broader range of domains, thereby testing and demonstrating the true potential of paraconsistent logic. Today, its applications are diverse, spanning from category theory [9] to artificial intelligence [10; 11]. For instance, in artificial intelligence, paraconsistent logic has been transformed into an annotated logic with a semantic framework.

Da Costa's influence on Latin American philosophy has been profound and continues to resonate strongly. As such, gaining a comprehensive understanding of paraconsistent logic in Latin America is inseparable from understanding the development of da Costa's theoretical contributions.

A panoramic view

In classical logic, a *contradiction* is the fastest route to inconsistency. But what exactly does that mean? A contradiction occurs when two opposing propositions – such as "The sky is blue" and "The sky is not blue" – are both held to be true under the same conditions. In a classical logical system, if both a formula α and its negation $\neg\alpha$ are provable (i.e., theorems of the system), then the system is deemed inconsistent. More problematically, from such a contradiction, any formula whatsoever can be derived – a principle known as the *principle of explosion* (*ex contradictione quodlibet*). This results in a trivial system, where every statement is provable. In classical logic, inconsistency and triviality go hand in hand. To avoid such collapse, classical logic enforces the Law of Non-Contradiction as a formal restriction:

(1) $\vdash\neg(\alpha\wedge\neg\alpha)$ [Law of Non-Contradiction]

This states, in the language of propositional logic[3], that it is impossible to derive both a proposition and its negation.

[3] Since there are stronger logics than propositional logic distributed in several orders – first order, second-order and so on – the law of non-contradiction may be formulated in several languages related to different orders [12. P. 220].

Because classical logic was long regarded as the only valid system of logic, contradiction and trivialization were traditionally treated as equivalent [13]. Hence, in any classical logical system, the presence of a contradiction in given set Γ of formulas implies triviality via the principle of explosion:

(2) $\Gamma, \alpha, \neg\alpha \vdash \beta$ [Principle of Explosion]

which establishes that for any set of propositions Γ that includes a contradiction is possible to derive any proposition β.

For many centuries any logical system that could shelter any contradiction – trivialization – was considered useless due to this principle. Yet, numerous fields – including law, linguistics, sociology, mathematics, artificial intelligence, and even empirical sciences – often work with contradictory data. Still, these disciplines are far from useless. This gap between logical theory and practical reasoning prompted the development of new logics.

There are circumstances, however, that motivate one to build a logic that can be the underlying logic of inconsistent but non-trivial theories. The latter are theories that, despite being inconsistent, do not entail everything (that is, they do not have every sentence in the language as a theorem). Clearly, the logic in question cannot be classical logic, or most extant logics, since they are trivialized by a contradiction – in the sense that every sentence in the language can be derived. These logics do not allow for inconsistent theories but non-trivial theories [12. P. 221].

Unlike classical logic, paraconsistent logic allows contradictions within its framework without permitting them all to lead to trivialization. This opens a new space for formal reasoning that more closely reflects the processes of thought and scientific discovery. In paraconsistent logic – as opposed to classical logic – contradictions can be informative [1].

But how is this achieved?

Basically, paraconsistent logic restrict the principle of explosion by stating that from a set of propositions where α and $\neg\alpha$ are both theorems, it is not permitted to extract any arbitrary proposition as a theorem also. It is explicit that one is just prohibiting the explosion and not the contradiction. That is, contradiction is permitted, explosion is not. Formally, for a non-empty set of propositions Γ:

(3) $\Gamma, \alpha, \neg\alpha \nvdash \beta$ [Prohibition of the Principle of Explosion]

where β represent all possible inferences from Γ. Basically, in the case of a contradiction, neither all formulas are theorems of Γ.

Thus, paraconsistent logic accepts contradiction while forbidding trivialization. The goal of paraconsistency is not to eliminate contradiction, but to sustain non-trivial reasoning in its presence [14. P. 2]. Non-triviality is the central achievement of paraconsistency: contradictory information can be received by the system without leading to arbitrary conclusions.

An everyday analogy may help illustrate this. Imagine you are purchasing an autonomous car. You have two options: an Aristotelian car, based on classical logic,

and a paraconsistent car, based on paraconsistent reasoning. You choose the Aristotelian one. It follows all traffic laws, including obeying traffic lights. One night, under a bright full moon, your car suddenly stops. It mistakes the light of the moon for a yellow traffic signal[4]. It knows nothing about the moon – it simply recognizes a red circular light. On your screen appears the message: "It is a traffic stop." You return the car to the dealership. They offer a free software update. Now, your car can distinguish between the moon and a red traffic light 98% of the time. Classical logic to the rescue. A year passes without issues. Then, on a rare night with a red moon, your car stops again. It is hard for it to distinguish between the moon light and the red light. It now displays: "It is a traffic stop and it is not a traffic stop." Faced with a contradiction, your Aristotelian car is logically paralyzed. According to the principle of explosion, the contradiction permits every conclusion. It could crash, freeze, or behave erratically – anything is derivable. By contrast, the paraconsistent car, while needing the same updates, would handle the contradiction differently. It would contain the contradiction, wait for further data, and then decide how to proceed. It would not halt indefinitely or infer everything and nothing at once. It would continue functioning while managing inconsistent information.

Consequently, in da Costa's paraconsistent logics, the principle of explosion is not generally valid. Instead, the logic controls when explosion is permitted through the introduction of a consistency predicate: $\alpha\circ$, read as " is well-behaved" or "α is non-contradictory."

Formally, $\alpha\circ$ stands for: $\neg(\alpha\wedge\neg\alpha)$.

If $\alpha\circ$ holds (i.e., $\circ$A is provable or assumed), then classical logic rules apply, and explosion is permitted:

From $\alpha\circ$, α, $\neg\alpha\vdash\beta$ (Explosion is permitted)

However, if $\alpha\circ$ does not hold, then:

α, $\neg\alpha\nvdash\beta$ (Explosion is not permitted).

This allows the system to internalize the concept of consistency and reason about it *within* the logic itself – a powerful feature absent in classical systems. A logical system may thus contain contradictions without collapsing. There are different kinds of contradictions, and not all are equally damaging[5] [6; 7].

A historical view

Paraconsistent logic has undergone at least three major formal developments. The earliest formal paraconsistent systems were independently introduced by three

[4] Example drawn from a real situation: "Incident 145: Tesla's Autopilot Misidentified the Moon as Yellow Stop Light". Available from: https://incidentdatabase.ai/cite/145/ (accessed: 12.12.2024).

[5] It is worth noting that the internalization of contradiction can be iterated indefinitely. This result is significant, as it leads not only to various types of negation, but also to an infinite family of paraconsistent logics, each with a distinct scope of paraconsistency. See [1; 13].

logicians, each pursuing distinct motivations and contexts. In 1948, in Poland, Stanisław Jaśkowski – a disciple of Łukasiewicz – formulated a discursive logic within propositional logic aimed at addressing contradictory statements. Later, in 1959, the American logician David Nelson [15] developed a paraconsistent system applied to arithmetic. Independently, between 1959 and 1963, Newton da Costa in Brazil constructed several systems of paraconsistent logic encompassing both propositional and predicate logic, which he applied to the study of descriptions and set theory [1; 8]. These foundational works not only emerged independently but also carried distinct philosophical and technical motivations. Following these initial developments, paraconsistency began to attract increasing attention as a serious alternative to classical logic.

Additionally, a distinct perspective on paraconsistency emerged: the dialetheism. Dialetheism – originated from the Australian school of paraconsistency – holds that some contradictions are not merely formal anomalies but actually exist in reality. Its principal advocate is the Australian logician Graham Priest [16], who defends the view that certain paradoxes – such as the Liar paradox and Russell's paradox – demonstrate that some contradictions are true. Although controversial, this realist interpretation of contradiction has gained a substantial following [17].

In contrast, this kind of ontological realism is generally not adopted by other schools of paraconsistency [18]. Da Costa, for instance, maintained that paraconsistent logics provide a formal perspective on reasoning but refrained from asserting whether contradictions truly exist in reality. This philosophical agnosticism is emblematic of the Brazilian school of paraconsistency [7. P. 227].

Paraconsistency can be viewed as a project extended for the last 60 years [2] that has been expanded and enriched by the efforts of researchers at different places of the globe. Here follows a non-exhaustive list of those efforts:

Paraconsistent logic can thus be seen as a long-term research project – spanning over six decades [2] – that has evolved through the efforts of scholars across diverse intellectual traditions and geographical regions. What follows is a non-exhaustive list of such contributions (*table 1*):

Table 1. **Contributors and developments in paraconsistent logic**

Period	Main contributors and developments
1910s–1930s	**Nicolai A. Vasiliev** (Russia) proposes an informal idea of an *imaginary logic* where contradictions are tolerated. **Jan Łukasiewicz** (Poland) explores non-classical logics that challenge the principle of non-contradiction. **Stanisław Jaśkowski** (Poland) develops his discursive logic – a propositional approach to paraconsistency
1950s–1960s	**Newton da Costa** introduces the first formal paraconsistent systems, known as the *C-systems* (C_1, C_2, ..., C_n). These systems allow for the coexistence of contradictory statements without triviality. Da Costa's C-systems become foundational in paraconsistent logic worldwide. **Ayda Ignez Arruda** (Brazil) was the first to formalize Vasiliev's ideas, highly contributing to the popularization of paraconsistency.

Period	Main contributors and developments
1970s	Da Costa and **Francisco Miró Quesada** (Peru) work on axiomatic systems to handle inconsistent information.
1980s	Da Costa and **Rolando Chuaqui** (Chile) work in a formal and systematic study on pragmatic truth – a precursor for quasi-truth theory in the 1990s. Da Costa and **Jean-Yves Béziau** (France/Brazil) collaborate on non-classical logics and explore universal logic. Growth of the Brazilian school of paraconsistent logic, with contributions from scholars like **Walter Carnielli** (Brazil), **Itala D'Ottaviano (**Brazil), and others. **R. D. Routley [Richard Sylvan]** *(*Australia*)* developed semantic frameworks to formalize reasoning with contradictions, contributing to the theory of inconsistent reasoning.
1990s	**Graham Priest** (United Kingdom/Australia) popularizes dialetheism with works like *In Contradiction* (1987). Walter Carnielli and collaborators develop Logics of Formal Inconsistency (LFIs) – a major breakthrough that generalizes da Costa's systems and introduces consistency operators inside the language. Da Costa and **Décio Krause** (Brazil) start investigating the interface between paraconsistent logic and quantum theory. Krause would ultimately develop the Quasi-set Theory. **Andrés Bobenrieth** (Chile) and **Carlos Verdugo** (Chile) investigate the unsettling outcomes of paraconsistency related to logical pluralism.
2000s	LFIs are expanded by Carnielli, **Marcelo Esteban Coniglio** (Argentina/Brazil) and **João Marcos (**Brazil), including C-systems with modal and epistemic operators. Da Costa and **Steven French** (United Kingdom) begin working together on a series of philosophical papers that explore how paraconsistent logic can be used to analyze the structure and practice of science. Brazilian researchers (Carnielli, Marcos, Coniglio, and others) explore combining paraconsistent logic with modal, temporal, and relevance logics. Application of LFIs in knowledge representation, argumentation theory, and formal ontology. **Otávio Bueno** (Brazil/USA) contributes significantly by bridging logic and philosophy of science by exploring partial structures, inspired by da Costa's quasi-truth, as a way to formally model incomplete or inconsistent scientific models. **Diderik Batens** (Belgium) relates adaptive logics and paraconsistency, allowing reasoning in the presence of inconsistency.
2010s	**Edelcio de Souza** (Brazil), Carnielli, Marcos, Coniglio, and others contribute to applications in category theory, computer science, legal reasoning, and philosophy of logic. Growth of academic programs in logic and philosophy of logic in Brazilian universities (e.g., Unicamp, UFSC, UFRN, USP). International collaborations deepen Brazil's central role in paraconsistent logic research.
2020s – Present	Ongoing work in quantum logics, paraconsistent machine learning, and multi-agent systems. Application of LFIs to paraconsistent AI, inconsistent information systems, and non-monotonic reasoning. Development of paraconsistent approaches to vagueness and uncertainty. In 2024 the 7th World Congress of Paraconsistency (WCP7) took place in Oaxaca, Mexico. The congress brought together leading scholars in paraconsistent logic.

Source: compiled by Lauro de Matos Nunes Filho

Today, paraconsistency is a thriving field within logic. Given the existence of many – indeed, infinitely many – distinct systems, it is more accurate to speak of *paraconsistent logics* in the plural. The diverse ramifications emerging from paraconsistency represent a substantial and enduring contribution to logic as a whole.

Paraconsistency logics in Latin America and its uniqueness

In Latin America, paraconsistent logics have developed a distinctive character. Inspired by the influential formulation proposed by da Costa, many authors have followed his path into paraconsistency [19]. In what follows, we do not aim to delve into the formal aspects of these theories, but rather to explore their scope and significance.

In Latin America – during the 1960s and beyond – paraconsistent logic became a powerful catalyst for the integration among scholars that were seeking non-standard solutions for problems related with logic and mathematics. Several conferences dedicated to paraconsistency were held both in Latin America and elsewhere. In the region, these meetings facilitated a form of intellectual integration centered around a shared theoretical and identitarian issue.

In Brazil in particular, paraconsistent logic has developed along several lines. However, all its branches share a common core: a rejection of commitment to real contradictions. Following da Costa, paraconsistency in Brazil has been conceived as a tool to investigate the limits of rationality in a pluralistic world without definitive boundaries for rational thought itself. This perspective supports a non-realist stance on logic, avoiding commitment to a single, definitive logic. As noted earlier, this view has been subject to criticism, particularly from other schools such as the Australian School of paraconsistency. The latter advocates for the reality of contradictions and rejects classical logic as a false theory, promoting paraconsistent logic as *the* logic [20. P. 39]. However, the Brazilian view appears more consistent with a non-colonial understanding of logic, rejecting the notion that there is only one true logic. Thus, the monocular perspective of classical logic is replaced by a non-Eurocentric view that tends toward logical pluralism [21].

It was in Brazil that paraconsistent logic received its definitive formal treatment through the work of da Costa. His contributions were not only prolific and foundational to the theory itself, but also instrumental in projecting Brazilian philosophy both within and beyond national borders [22]. His influence was unprecedented in the Brazilian academic context, paving the way for a generation of researchers. Brazilian universities[6] began to develop a robust tradition in paraconsistency, integrating logic, mathematics, and philosophy. Moreover, da Costa was a consistent advocate for the advancement of academic research throughout Latin America, promoting conferences and research centers not limited

[6] In particular, University of São Paulo (USP), State University of Campinas (UNICAMP), Federal University of Santa Catarina (UFSC), Federal University of Paraná (UFPR), Federal University of Pernambuco (UFPE), Federal University of Rio Grande do Norte (UFRN), among others.

to paraconsistency alone. While it is impossible to list all the scholars influenced by his philosophy, we highlight a few of them here.

Ayda Arruda was one of the first to approach paraconsistency from a historical perspective [1]. She also conducted comparative studies of different paraconsistent systems, fostering discussions among the leading figures in the field at the time. Walter Carnielli conducted extensive research in this area. Notably, he worked on a formal framework that made a new semantic approach to paraconsistency viable. Along with others [14], he developed the Logic of Formal Inconsistency (LFI), which treats the framework of paraconsistent logic as an object language that can be analyzed hierarchically, thereby promoting generalized results on the subject. LFIs allow consistency to be expressed within the object language – an essential development for future applications. Decio Krause collaborated closely with da Costa for many years, working on projects directly related to paraconsistency, such as Schöredinger's Logics – a non-reflexive logic intended to capture key features of quantum mechanics [23]. He also developed a highly original set theory called *Quasi-set Theory*, capable of handling entities that cannot be well-defined in terms of identity, as is often the case in quantum mechanics [24]. Itala D'Ottaviano contributed studies on the history and development of non-classical logics – particularly paraconsistent systems and many-valued logics [25]. Otávio Bueno collaborated with da Costa on numerous works ranging from paraconsistent systems to metalogical discussions concerning the nature of contradiction [26]. His research also included a detailed study of partial structures related to paraconsistency [19].

Although primarily developed in Brazil, paraconsistent logic is not confined to the Brazilian school. It is, in fact, a topic of considerable interest among researchers throughout Latin America.

Paraconsistent logic in Latin America, influenced fundamentally by Newton da Costa, has emerged as a significant intellectual movement, particularly in countries such as Argentina, Chile, and Mexico. In Argentina, paraconsistent logic was introduced by Florencio Asenjo [27], a distinguished mathematician who worked on early paraconsistent systems. His influence was foundational for subsequent generations of Argentine logicians, including the prolific work of Eduardo Barrio [21]. In Chile, Rolando Chuaqui [28] advanced non-classical logic by incorporating paraconsistency into mathematical and philosophical logic. Other Chilean scholars such as Carlos Verdugo [29] and Andrés Bobenrieth [29; 30] applied paraconsistent frameworks to philosophical logic, exploring the semantics of contradiction, trivialization, and logical pluralism.

In Mexico, researchers like Luis Estrada-González [31] and María del Rosario Martínez-Ordaz [32] embraced paraconsistent logic, contributing to its application in areas such as the foundations of mathematics, logical consequence, and computational logic. Verónica Borja Macías [33], also from Mexico, has made significant contributions to the study of paraconsistent systems and their dual logics. These are only a few among many scholars who have been involved, directly or indirectly, in the development of paraconsistency in Latin America.

Conclusion

As a non-classical logical framework, paraconsistent logics offer a powerful and meaningful approach to problems that have historically been considered unsolvable [34]. Contradictions – present across various domains of knowledge – may, in fact, deepen our understanding of reality without collapsing into irrationality.

Paraconsistency invites us to reconsider the meaning of the terms "classical" and "non-classical." After all, it may not be particularly relevant to privilege one approach over the other. The fact that we have historically thought and acted in a specific way does not imply that it is the only valid way to think or behave.

Logic is constituted through history, and it does not seem possible to foresee the vicissitudes of its evolution. A specialist at the beginning of the century, even if familiar with the works of Frege, Russell, and Peano, would hardly have been able to anticipate the transformations that logic has undergone over the past forty years. This is not merely a matter of progress in scope; the very concept of logicality has changed. Today, heterodox logics have entered the scene with great force: no one could predict where many-valued, relevant, and paraconsistent logics will lead us. Perhaps in the coming years, a new alteration of the idea of logicality awaits us – one that is currently unimaginable [35. P. 232].

The Aymara people of the Andes in South America exemplify how everyday speech and thought can diverge from dominant conceptual frameworks. The Aymara express time through language in a way that contradicts the Western conception [36]. They maintain a front-back spatial relationship with the past and future, respectively: when referring to the past, they point forward, and when referring to the future, they point backward. For them, the future is unknown and thus cannot be seen, so it remains behind them; the past, being known, is in front of them. This orientation reflects a different conception of time – one in which the past is ever-present and the future more distant. From a Western standpoint, this view of time may appear contradictory, yet it is difficult to argue that it is irrational or incomprehensible. Despite their apparent contradiction, both conceptions appear valid.

Paraconsistent logic arises in response to such situations. In this context, paraconsistent logic expresses a broader philosophical vision–one that embraces contradiction not as a failure, but as a powerful tool for engaging with complexity, ambiguity, and the multiplicity of perspectives. This approach not only broadens the scope of formal logic but also highlights one of Latin America's original contributions to philosophy. Thus, the development of paraconsistent logic stands as both a formal innovation and a significant philosophical achievement – particularly within the Latin American intellectual tradition.

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