

Baptizing Paraconsistent Logics: The Unique Touch of Miró Quesada

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Abstract

In this paper, we present and analyze the principal historical events surrounding the creation of the word '*paraconsistent*', as well as its introduction as the name for inconsistent but non-trivial formal systems. Initially, these systems were called 'sistemas formais inconsistentes' (inconsistent formal systems, in Portuguese) by Newton da Costa when he introduced his *C*-systems in 1963. In the early 1970's, however, da Costa asked Francisco Miró Quesada Cantuarias to suggest him a meaningful name for this new family of formal systems. The goal was achieved in a correspondence exchanged in 1975, when Miró Quesada suggested to Newton da Costa an all-embracing name which finally came to predominate. His master touch into history of paraconsistent logic was presented to the international academic community in a conference delivered by Miró Quesada at the Third Latin American Symposium on Mathematical Logic (III SLALM), held in 1976 at the University of Campinas.

Keywords: history of logic, non-classical logics, paraconsistent logic, Third Latin American Symposium on Mathematical Logic (III SLALM), University of Campinas (UNICAMP).

Introduction

A theory whose underlying language has a symbol for negation is *inconsistent* if there is a formula of its language such that this formula and its negation are both theorems of the theory; otherwise, the theory is called *consistent*. A theory is *trivial* if all formulas of its language are theorems. If the underlying logic of a theory is classical logic, or another standard logic such as intuitionistic logic, inconsistency entails triviality, and conversely [see 14].

A logical system is *paraconsistent* if it can be the underlying logic for inconsistent but non-trivial theories, which are called *paraconsistent theories*. In

accordance with the practice of da Costa, Bueno and Krause [11, p. 1]¹, and with the original meta-mathematical terminology of Hilbert and his school, our use of the terms ‘consistency’ and ‘inconsistency’ is syntactical.

In paraconsistent logics, the scope of the Principle of (Non-)Contradiction is in a certain sense restricted. Furthermore, in every paraconsistent logic, from a formula and its negation it is not possible, in general, to deduce any formula of the language. That is, in paraconsistent logics, the Principle *Ex Falso Sequitur Quodlibet* (or *Ex Impossibili Sequitur Quodlibet*, or *Ex Contradictione Sequitur Quodlibet*, nowadays also known as Principle of Explosion) is not valid.² Because of this, in paraconsistent logics the notions of inconsistency and triviality are, in fact, independent notions [see 17].

However, the study of inconsistent but non-trivial theories, and of the deductive systems underlying such theories, was practiced for some time, from the 1960's into the 1970's, without a suitable name being attributed to it.³ Until an appropriate name was finally proposed, theorists involved in the investigation of these systems simply referred to them as ‘logics of inconsistent formal systems’ [cf. 6, 7].

The birth certificate of paraconsistent logic was drawn up in a letter from the Peruvian philosopher Francisco Miró Quesada Cantuarias (1918–2019), the proposer of the name, to Newton da Costa (1929), one of the creators of modern paraconsistent logics. In the abundant correspondence between them, the letter dated September 29, 1975, is especially remarkable.⁴ In this notable

¹Carnielli and Coniglio [5, p. 7] consider the concept of consistency as a primitive one. Our concept of inconsistent theory is, for them, the concept of contradictory theory, non-contradictory theories being the theories that we define as ‘consistent theories’.

²Although we recognize the distinct logical nuances in each of these expressions, we consider that *Ex Falso Sequitur Quodlibet* embraces these principles as special cases of the *Ex Falso*. Our conclusion in this regard is motivated by a historical analysis [see 17], especially of the discussions of the *Ex Falso* by several thinkers of the Middle Ages. As far as we know, the first thinker to use the expression *Idem Esse Ex Contradictione* was John of Salisbury [33], alluding to the position of the school Adam of Balsham in the debates of the time. Also as far as we know, Miró Quesada was the first contemporary philosopher to use the expression *Ex Contradictoriis Quodlibet* in the context of paraconsistency, which he did in his 1988 paper ‘La lógica paraconsistente y el problema de la racionalidad de la lógica’ (‘Paraconsistent logic and the problem of the rationality of logic’, in Spanish) [26, p. 612, n. 52]. Mortensen, in his well-known book *Inconsistent Mathematics* published in 1995 [see 28, p. 2], also used the expression *Ex Contradictione Quodlibet* in the context of paraconsistency. In 1996, Bobenrieth used the expression *Ex Contradictione Sequitur Quodlibet* [3, p. 103], and Dalla Chiara mentions *Ex Absurdo Sequitur Quodlibet* in 1974 [13, p. 27]. In fact, the expression *Ex Contradictione Sequitur Quodlibet* had been previously used in the literature by several other logicians as, for instance, Barth and Krabbe in 1982 [2, p. 167].

³S. Jaśkowski introduced his known discussive logic D_2 , a paraconsistent logic, in 1948 [see 19, 20]. His papers were translated from Polish into English in 1969 [21] and 1999 [22, 23, see also 14, 17].

⁴See facsimile in Figure 1(a–b) on pp. 255–256 below.

letter, Miró Quesada begins by expressing great contentment over da Costa's having invited him to come the following year to the University of Campinas (UNICAMP), in Campinas, São Paulo State, Brazil, to participate in the Third Latin American Symposium on Mathematical Logic (III SLALM).⁵ However, Miró Quesada was even more satisfied to be able to respond to his friend's request that he had found a name for the logics of inconsistent and non-trivial formal systems.

The aim of one of our general research projects, to which this paper belongs, consists in studying how a truly paraconsistent perspective was constituted in Western thought, as well as how logical principles, rules, and systems have expressed the various contemporary concepts of paraconsistency.

During the development of this project, we have done careful research in the documents donated by Newton da Costa to the Historical Archives of the Centre for Logic, Epistemology and the History of Science, and which constitute the 'Newton da Costa Trust'. There we found the precious letter addressed by Francisco Miró Quesada to Newton da Costa, which we have mentioned at certain academic events in which we have participated. A facsimile of the letter was published for the first time in the doctoral dissertation of Evandro Luís Gomes, *Sobre a história da paraconsistência e a obra de da Costa: A instauração da lógica paraconsistente (On the History of Paraconsistency and da Costa's Work: The Establishment of Paraconsistent Logic*, in Portuguese), defended at the University of Campinas (UNICAMP) in December of 2013 under the supervision of Itala M. Loffredo D'Ottaviano [see 16, pp. 609–610]. The facsimile also appears in our book *Para além das Colunas de Hércules: Uma história da paraconsistência de Heráclito a Newton da Costa (Beyond the Pillars of Hercules: A History of Paraconsistency from Heraclitus to Newton da Costa*, in Portuguese) [see 17, pp. 610–611]. The book presents a historical analysis of the development of paraconsistency and paraconsistent logic in Western thought, having in view the appreciation of its historical roots and stages of formation. In this paper⁶, we present and analyse the main known historical events concerning the creation of the word 'paraconsistent', as well as its introduction as the name for inconsistent but non-trivial formal systems.

In Section 1, we present the famous correspondence between Francisco Miró Quesada and Newton da Costa, with the facsimile of Miró Quesada's pivotal letter of September 29th, 1975. In this same volume, Luis Felipe Bartolo Alegre also presents the facsimile of such letter with a complete translation of it from Spanish into English [see 27].

⁵Miró Quesada begins the letter by saying that 'Lydia Arruda' had just written to him, an equivocal, for it was 'Ayda Ignez Arruda' who had written to him, inviting him to participate in the III SLALM.

⁶Part of this article has previously appeared in Section 4.3.3 of [17, pp. 474–479].

Next, we describe how the terms ‘paraconsistent’ and ‘paraconsistent logic’ were introduced by Miró Quesada, and proposed to the logical academic community during the Third Latin American Symposium on Mathematical Logic (III SLALM), organized by Ayda Iñez Arruda and held at the University of Campinas. Two photos taken during the event are presented.

In the third section, we discuss the etymological roots of the term ‘paraconsistent’, proposed by Miró Quesada to Newton da Costa. Finally, we present our final remarks, claiming that Francisco Miró Quesada ineradicably left his mark on the history of paraconsistency and paraconsistent logic.

1 The Famous Correspondence

As noted earlier, a suitable name for the theory of inconsistent and non-trivial formal systems was needed in order to clearly express the theoretical position of its advocates, and thereby favor its understanding and acceptance within the logical-mathematical-philosophical community. Newton da Costa relates how this came about:

It was then that I wrote to Miró Quesada, who viewed the new logic with great enthusiasm, asking him to suggest a name for it. I remember as if it were today that he responded by making three proposals: it could be called metaconsistent, ultraconsistent, or paraconsistent. After commenting on these possible names, he stated that he found the latter to be the best. For me the word ‘paraconsistent’ sounded splendid, and I began to use it, insisting also that all interested parties do the same. [8, pp. 69–70]

In his letter to da Costa, the Peruvian philosopher argued in sequence for his three suggestions. In presenting the first of them, he says:

I am very pleased to hear from you about the name that could be given to the logic of inconsistent systems. It is a problem that would be easy if it were not for the pernicious semantic load of the words. I think the ideal name is ‘ultraconsistent logics’, because ‘*ultra*’ in Latin means ‘beyond’. Remember the pillars of Hercules: *Non plus ultra*, and the motto of the *colónidas*⁷: *plus ultra*, that is, beyond the pillars of Hercules. You are a *colónida* of logic because you have

⁷According to Luis Felipe Bartolo Alegre, “Miró Quesada possibly refers to the Peruvian literary movement *Colónidas*, which developed between 1915 and 1916” [27, p. 167, fn. 6]. According to the Peruvian writer Luis Alberto Sánchez, “On February 15, 1916, there appeared the first issue of *Colónida*, a monthly literary magazine. The name *Colónida* indicated the discovering and pioneering ambition of the magazine’s founders. It was a sequel to Columbus’

exceeded consistency; you have created a logic that goes beyond consistency, as it can be applied to both consistent and inconsistent systems (avoiding trivialization in the last case). The bad thing is that ‘*ultra*’ is used today as synonymous with an extremely intense increase of a quality. So ‘ultraconsistent logic’ gives the impression of being a logic that has an extraordinary consistency, an anointed and consecrated consistency. [24, p. 1: lines 15–28; our italics]

The metaphor evoked by Miró Quesada is admirable: Newton da Costa has gone beyond the Herculean pillars of logic—*logicae Herculis columnae*—, that is, beyond consistency, extending the limits of known logicity and reestablishing them through paraconsistent logic. The image evoked here by Miró Quesada comes from Greek mythology. Hercules, in carrying out his tenth labor—bringing the oxen of the monster Geryon to King Eurystheus—traveled to the island of Erytheia in the far west of the Mediterranean. As a memorial to his passage, according to some versions of the myth, Hercules erected two mountains, one in Africa and the other in Europe: the first being Mount Hacho in Ceuta (or, alternatively, Mount Musa in Morocco), the second being the Rock of Gibraltar. In another version of the myth, the Greek hero split a mountain in the middle, giving birth to the Strait of Gibraltar and thus connecting the Mediterranean to the Atlantic Ocean. The Pillars of Hercules (*Hercules columnae*) were considered for centuries by the maritime peoples of the Mediterranean world to be the limits of navigation. Like the navigators of the Age of Exploration, Newton da Costa had traversed the Pillars of Hercules: the former traveling to a new land, the latter toward new perspectives of logic.

Continuing on to the second of his suggested names for the logic of inconsistent and non-trivial formal systems, Miró Quesada writes:

For this reason, perhaps it would be better to say ‘metaconsistent logics’ because ‘meta’ means ‘beyond’ or ‘after’ in Greek, that is, more or less the same thing as ‘ultra’ (it also means other things with different grammatical cases). It also sounds very nice. It is true that it is a barbarism, or rather a solecism, but this doesn’t matter, because ‘sociology’ is also. The defect of ‘metaconsistent’ is that ‘meta’ is associated in the mathematical-philosophical milieu with ‘meta-theory’ and gives the impression that it is a logic related

work, a foot in a new world: that of the new literature. ... *Colónida* was intended to be a banner of aesthetic revolution” [35, p. 7]. We want to thank Luis Felipe for sharing this information with us.

to meta-language. But aside from this semantic load, I would not see any objection. [24, p. 2: lines 1–6]⁸

Like the previous suggestion, this term suffers semantic interference from more consolidated uses of the prefix. Miró Quesada then suggests the name that would be destined to travel the world and accurately translate the very spirit of the logics of inconsistent and non-trivial formal systems. He presents it thus:

There is, however, another possibility: use ‘para’, which in Greek means ‘next to’. ‘Paraconsistent logics’ sounds nice, a little esoteric, gives a more or less precise idea of what it is about (logics that are not like the classical ones, but that fall next to them as they can be applied to inconsistent systems), and has the advantage that there is no deforming semantic load. I therefore propose that you choose from the three following names, whose precision is due to their negative semantic load:

- 1) Ultraconsistent Logics
- 2) Metaconsistent Logics
- 3) Paraconsistent Logics

I hope that you like any of the three, and I would be happy to have contributed to baptizing these types of logics that have such great philosophical importance. [24, p. 2: lines 7–20]

This is undoubtedly the first time in history that the term ‘paraconsistent’ was written. Miró Quesada’s letter is therefore a primary source unique to the history of paraconsistency, and may be said to constitute the baptismal certificate of paraconsistent logic. The choice of name contributed greatly to the effort to establish and legitimize this area of logical-formal research.

The name was finally made public at an important continental logic event, the Third Latin American Symposium on Mathematical Logic (III SLALM), held at the Institute of Mathematics, Statistics and Computer Science (IMECC, nowadays the Institute of Mathematics, Statistics and Scientific Computation) at the University of Campinas from July 11 to 17, 1976.

⁸Note that our translation of the passages of Miro Quesada’s letter quoted in this paper does not coincide exactly with that given by Luis Felipe Bartolo Alegre [27].



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LIMA - PERU

Lima 29 de Setiembre de 1975

Querido Newton:

muchas gracias por la invitación a Campinas. Me acaba de escribir Lidya Arruda y, por supuesto, he aceptado. Pero como te dije en Lima, yo no me considero de ninguna manera un lógico, sino un filósofo informado. Sin embargo, tal como tu me hiciste ver las cosas, creo que, en el plano filosófico si puedo plantear cosas interesantes y que manejo la lógica lo suficiente como para poder decir algunas cosas originales desde el punto de vista de la filosofía del conocimiento. He aceptado participar en las conferencias sobre lógicas no clásicas, porque creo que puedo decir algunas cosas de interés sobre la significación de la lógica de los sistemas inconsistentes para la filosofía del conocimiento. Pronto te escribo en detalle para que veas lo que pienso hacer. Como siempre tus sugerencias serán recibidas con júbilo.

Me halaga mucho que me consultés sobre el nombre que podría darse a la lógica de los sistemas inconsistentes. Es un problema que sería fácil si no fuera por la maldita carga semántica de las palabras. Creo que la ~~denominación ideal~~ denominación ideal es "lógicas ultraconsistentes", porque "ultra" en latín significa más allá de. Acuérdate de las columnas de Hércules: Non plus ultra y del lema de los colonias: plus ultra, es decir, más allá de las columnas de Hércules. Tu eres un colónida de la lógica pues has rebasado la consistencia, has creado una lógica que va más allá de la consistencia pues se puede aplicar tanto a los sistemas consistentes como inconsistentes (evitando en este caso la trivialización). Lo malo es que "ultra" se utiliza hoy día como sinónimo de aumento sumamente intenso de una cualidad. De manera que "lógica ultraconsistente" da la impresión de ser una lógica que tiene una consistencia extraordinaria, una consistencia oleada y sacramentada. Poreso tal vez sería mejor decir "lógicas metaconsistentes" pues "meta" significa en griego más allá de, después de, o sea, más o menos lo mismo que ~~ewxwxwx~~ "ultra" (significa, además, otras cosas, pero con casos diferentes). Ade-

Figure 1a: Letter of Francisco Miró Quesada to Newton da Costa, September 29, 1975, *recto* (SPCLEARQ, FNCAC, 147).



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más suena muy bonito. Es cierto que es un barbarismo o mejor, un solecismo, pero ello no le hace, pues sociología también lo es. El defecto de "metaconsistente" es que "meta" se asocia en los medios matemático-filosóficos con "metateoría" y da la impresión de que se trata de una lógica relativa al metalenguaje. Pero, fuera de esta ~~waw~~ carga semántica, no vería yo ninguna objeción.

Hay, empero, otra posibilidad: utiliza "para" que en griego ~~waw~~ significa al lado de. "Lógicas paraconsistentes" suena bonito, esotérico un poco ~~waw~~, da una idea más o menos precisa de lo que se trata (lógicas que no son como las clásicas, sino que quedan un poco al lado de ellas pues pueden aplicarse a sistemas inconsistentes) y tiene la ventaja de que no hay carga semántica deformante. Te propongo pues, a elegir, entre las tres denominaciones siguientes, cuya precisión está en razón de su carga semántica negativa:

- 1) Lógicas ultraconsistentes
- 2) Lógicas metaconsistentes
- 3) Lógicas paraconsistentes

Ojalá que te guste alguna de las tres, me sentiría encantado de contribuir a bautizar a este tipo de lógicas que tienen tan gran importancia filosófica.

Pronto te escribo para contarte como fue el Congreso de Filosofía de Morelia, en el que tuve una activa participación, y para hablarte un poco de mis trabajos. Ah, y como creo ya haberte anticipado, quiero hacerte una consulta sobre la definición de número constructible.

Con un fuerte abrazo

Paco

2 Introducing ‘Paraconsistent’, ‘Paraconsistent Logic’, and ‘Paraconsistency’ into the World

At the Third Latin American Symposium on Mathematical Logic, organized by Ayda Ignez Arruda and the first of these symposiums to be held at UNICAMP, Miró Quesada lectured on ‘Heterodox logics and the problem of the unity of logic’ on July 15, 1976. It was in this lecture that he made public the suggestion of the names ‘paraconsistent logic’ and ‘paraconsistency’ [1, p. xvii]. After this public presentation of the names, there occurred a phenomenon unique in the history of the logic, which da Costa describes as follows:

Two or three months later, the miracle took place; the term circled the world, and all centers directly or indirectly linked to logic in the northern and southern hemispheres began to use it. I think that very few times in the history of science (and certainly in the history of logic) has anything similar happened, because not only did the word travel the whole world, but the logic itself that Miró Quesada called ‘paraconsistent’ gained a formidable impulse. It became one of the most debated logical theories of our time. [8, p. 70]

During the event itself, Elias Humberto Alves and Carlos Alberto Lungarzo had already used the term ‘paraconsistent’ in their communications, ‘On paraconsistent logic’ and ‘A paraconsistent infinitary propositional calculus’, respectively [1, p. xv]. The proceedings of the III SLALM, entitled *Non-Classical Logics, Model Theory and Computability*, were published in 1977 by North-Holland, and edited by Ayda Arruda, Newton da Costa, and Rolando Chuaqui [1]. But the lecture delivered by Miró Quesada and the communications presented by Alves and Lungarzo are not in the book, for they were not sent by the authors for publication.

Today, Newton da Costa looks back on these events and recognizes once again their importance:

I think the name is fundamental. When Professor Miró Quesada, a great friend of mine, a Peruvian, suggested this name, in a matter of months the whole world was talking about paraconsistent logic. In this case, the name almost created the discipline. ... In fact, he was a full professor at the Faculty of Law there at the University of San Marcos, and perhaps the first book on legal logic in Latin America was written by him. [17, p. 655, lines 368–371; 373–375]⁹

⁹This interview with da Costa was recorded in October, 2012, and was conducted by Evandro L. Gomes, Cesar A. Serbena, and Edna T. Felício Câmara. It was first published in [12], and soon after was included as an appendix in [16, pp. 641–665] and [17, pp. 646–664].



Figure 2: Opening of the Third Latin American Symposium on Mathematical Logic (III SLALM), Institute of Mathematics, Statistics, and Computer Sciences, UNICAMP, July 11, 1976. At the table, from left to right: Francisco Miró Quesada, Newton da Costa, Joseph Shoenfield, Ubiratan D'Ambrosio, Rolando Chuaqui, and Ayda I. Arruda (SPCLEARQ, FNCAC, F, AD, Ps 38, 27).

3 On the Talk Delivered by Miró Quesada

We did not have access to the original text of the lecture given by Miró Quesada during the III SLALM. However, it seems to us that the article ‘Las lógicas heterodoxas y el problema de la unidad de la lógica’ (‘Heterodox logics and the problem of the unity of logic’) [25] is a translation into Spanish of that lecture. The text, translated by the Peruvian professors Freddy Calderón and Oscar Masaveu, was published in 1978 in *Lógica: Aspectos formales y filosóficos* (*Logic: Formal and Philosophical Aspects*) [32], a volume edited by Diógenes Rosales Papa and published by the Pontificia Universidad Católica del Perú.

It is not part of the purpose of this article to analyze this original and, at the time, innovative and opportune text by Miró Quesada. However, we

cannot fail to present, even if briefly, some of the general ideas discussed there, as they are strongly related to non-classical logics in general and in particular to the then-recent creation of paraconsistent logic.¹⁰

For Miró Quesada, a topic of great relevance that has not been dealt with in a systematic way is “the relation of logical knowledge with the faculty that, classically, has been called ‘reason’”, remarking that, for him, “there must exist some kind of logical rationality” [25, p. 14].

The great proliferation of different heterodox logical systems leads Miró Quesada to believe that one may no longer be able to talk about the unity of reason; and that this proliferation is responsible for the difficulty faced by classical rationalism, for which logical principles were “fundamental and more general principles of reason” [25, p. 14]. Thus, an analysis of the true nature of non-classical logics is necessary.

Miró Quesada then characterizes what must be understood as classical logic, and considers that a logic is heterodox if its formal language is distinct from the language of classical logic, or is not assertoric, or does not satisfy one or more of the three classical logical principles (i.e., non-contradiction, excluded third, and identity).

Next, the author presents a classification of heterodox logics into different kinds or species, according to their degree of heterodoxy. A logic of the first kind is one that lacks only one of the three ‘classical notes’, it doesn’t matter which one: it may not have what Miró Quesada calls ‘a characteristic language’, i.e., it may be *aliolinguistic*; its sentences may not be propositions or theses, i.e., it may be *non-thetic*; or it may not satisfy (at least) one of the classical logical principles, i.e., it may be *anomic*. Among aliolinguistic logics are, for instance, modal logics, temporal logics, and infinite logics; among non-thetic logics are interrogative logics, imperative logics, and deontic logics; finally, among anomic logics are intuitionist logics and paraconsistent logics. A logic of the second kind lacks exactly two of those three classical notes, again it could be any combination of them. Similarly, logics of the third kind lack all three of those classical notes. Miró Quesada also considers a special class of quasi-heterodox logics, among which he includes combinatorial logics and partial logics.

It is worth noting here that Miró Quesada mistakenly remarks, in the same article, that in a paraconsistent logic both the Principle of Non-Contradiction and the Principle of the Excluded Third are not valid [25, p. 21, footnote 9].

¹⁰We intend to discuss Miró Quesada’s article in a future work.



Figure 3: Participants of the Third Latin American Symposium on Mathematical Logic (III SLALM), Institute of Mathematics, Statistics, and Computer Sciences, UNICAMP, July 11-17, 1976 (SPCLEARQ, FNCAC, F, AD, Ps. 38, 29). See Figure 4 on p. 264 for the identity of some of the participants.

In Sections 5 and 6 of the article, the necessary and sufficient conditions of logicality are analyzed, especially for the case of heterodox systems. In this discussion he argues that: “Having established the rational criteria of logical heterodoxy, we can now return to the main question: Can we maintain a rationalist conception of logic?” [25, p. 22]

The Peruvian philosopher ends his text with a section on the system of reason:

The analysis that we have done of the way in which the heterodox logics fulfill the necessary and sufficient conditions of logic allows us, we think, to look at them in a new way. Once it is observed that the heterodox logics fulfill the majority of the necessary classical conditions of logicality and that the majority of the sufficient conditions are the same in all systems, classical or non-classical,

it is impossible not to recognize that there is something worthy of being called reason, at least at the logical level. The entire immense range of heterodox systems is but a variation of the same melody. [25, pp. 40–41]

Classical logicians believed that logical principles could not be increased in number. But logical reason is in permanent discovery. [25, p. 42]

The existence of invariant standards of logical structure in classical and heterodox systems seems to indicate a possible way of dealing with this problem. Only by means of this kind of investigation can we gain some understanding of the meaning of logic and the way that human reason operates. [25, pp. 43–44]

Miró Quesada's text presents a discussion and classification of heterodox logics (see above) that is distinct from, and perhaps more complete than, that introduced by Susan Haack in 1975 [18]. Miró Quesada's includes paraconsistent logics in his classification, also in a more innovative than Haack's.

4 Etymological Roots

Miró Quesada's suggestion of employing the preposition 'para', taken from Attic Greek, was absolutely successful. In ancient Greek the preposition 'παρὰ' takes in a broad semantic spectrum, even admitting opposite denotations among its meanings. Ancient Greek, explains Muracho [29, vol. 1, p. 530], makes use of invariable words, eighteen prepositions that, before verbs, add to the verbal meaning (action or state) a spatial relationship and, by metaphor, a temporal relation. In this sense, 'παρὰ' means 'next to', in complete opposition to the idea of 'within'.

The original concrete meaning of 'παρὰ', Muracho explains, is 'next to' or 'along with', as Miró Quesada pointed out above, and its meaning varies in accordance with the grammatical case of its object [see 29, vol. 1, p. 533]. When the object is in the dative case, 'παρὰ' can have the meaning 'at the side of', as in the following example:

οἱ παρὰ βασιλεῖ ὄντες
 those who are *aside the king*
 [the court, the aulics, the closest to the king]¹¹

When the object is in the dative case, 'παρὰ' can have the meaning of 'beyond', as in the following example:

¹¹Xenophon, *An.* 1, 5, 1 [quoted from 29, vol. 1, p. 592].

καὶ παρὰ δύναμιν
 even *beyond* his power
 [stand aside, surpassing]¹²

These are the etymological roots that allow the term ‘paraconsistent’ to encompass distinct philosophical visions of paraconsistency, from the most sober to the most exaggerated.¹³ Béziau notes that among students of paraconsistency there were those who argue that reality is intrinsically contradictory [4, p. 105]; some of them, such as Asenjo, considered the name agreeable, while others suggested alternative names such as dialethic logic (Priest and Routley), transconsistent logic (Priest), and parainconsistent logic (Perzanowski) [see 10, p. 105]. These suggestions, however, did not go anywhere, probably due to the great semantic capacity of the term ‘paraconsistent’; the term very well translates the logical character of inconsistent (contradictory) but non-trivial logics, while at the same time it is capable of harboring diverse philosophical visions of the ontological study of contradiction.¹⁴

5 Final Remarks

Several important and recognized logicians from various countries participated as invited speakers in the Third Latin American Symposium on Mathematical Logic in 1976. From Latin America and Brazil, alongside Ayda Arruda, Newton da Costa, Rolando Chuaqui, and Roberto Cignoli, there also participated in the event some young logicians who are nowadays well-known points of reference in Latin American logic [see 15]. D’Ottaviano, then a doctoral student, witnessed the atmosphere of effusive revelry and acceptance that accompanied Miró Quesada’s lecture and suggestion of the term ‘paraconsistent logic’.

As noted before, Newton da Costa had written to Miró Quesada, asking him to suggest a name for his inconsistent and non-trivial formal systems. Paco had responded by making three proposals and stating that he had found the latter

¹²Thucydides, 8, 2, 2 [quoted from 29, vol. 1, p. 594].

¹³Thus, for perspectives on paraconsistency such as that of Priest [31, p. 130], the nomenclature is terminologically acceptable: “The prefix ‘para’ has a number of different significances. Newton da Costa informed me that the sense that [Miró] Quesada had in mind was ‘quasi’, as in ‘paramedic’ or ‘paramilitary’. ‘Paraconsistent’ is therefore ‘consistent-like’. Until then, I had always assumed that the ‘para’ in ‘paraconsistent’ meant ‘beyond’, as in ‘paranormal’ and ‘paradox’ (beyond belief). Thus, ‘paraconsistent’ would be ‘beyond the consistent’. I still prefer this reading.”

¹⁴As Béziau [4, p. 105] has written: “Although the term paraconsistent has perhaps imposed itself precisely by virtue of its conciliatory character, definitively reflecting its neutrality and allowing a liberal view of contradiction, paraconsistent logic can also be that of those who believe that the world is really contradictory, or of those who, independently of any ontological presupposition, are only concerned with generating contradictory packages of information.”

to be the best: metaconsistent logics, ultraconsistent logics, and paraconsistent logics. For da Costa “the word ‘paraconsistent’ sounded splendid”, he chose it and immediately began using it and “insisting also that all interested parts do the same.” Hence, da Costa chose ‘paraconsistent’ and began using the name, and Miró Quesada publicly announced the name during the III SLALM.

In 1989, D’Ottaviano participated in the First World Congress on Paraconsistency (I WCP), held in Ghent, Belgium, when Jerzy Perzanowski proposed the alternative name ‘parainconsistent logic’ for the paraconsistent systems, and she also participated in the *Jaśkowski Memorial Symposium*, held in Toruń, Poland, in 1998, when Perzanowski once again presented his proposal [see 30]. In both meetings, D’Ottaviano publicly protested and argued against Perzanowski’s suggestion.

Francisco Miró Quesada suggested to Newton da Costa an all-embracing name for inconsistent but non-trivial formal systems, and, in spite of other proposals, the term ‘paraconsistent’ prevailed.

Although we do not have the letter from da Costa that Miró Quesada was responding to, on September 29, 1975, da Costa talked about the event under discussion in a book honoring the 70th year of his Peruvian correspondent.¹⁵ First, da Costa explains the need for a good name for his logics:

Several years ago when I needed a convenient and meaningful name for a logic that did not from the start eliminate contradictions as false, that is, as absolutely unacceptable, Miró Quesada helped me. On this point, it should be remembered that, at that time, all logics thoroughly condemned contradictions. The new logic in which I worked therefore still found a great deal of resistance; it was little publicized, and those who were aware of it were, for the most part, skeptical about it. [8, p. 69]

Da Costa’s account shows how difficult the early days of paraconsistent logic were. If today paraconsistency is a theoretical option among many alternatives, at the time it was first proposed, in its beginnings, it was necessary for the pioneers of paraconsistency to overcome resistance in order for the new perspective on logicity to be legitimately admitted. Both from the theoretical and paradigmatic points of view, it was necessary for paraconsistent logic to be accepted as valid by the community of those who studied and did research on logic. On this point, as we shall see, the name ‘paraconsistent’ seems to have played a key role.

With regard to the choice of the name, and to Miró Quesada’s later suggestion of the term ‘paracomplete’ for describing those logics as duals of the

¹⁵For further details, see [34].

paraconsistent ones, in which the Principle of the Excluded Third does not hold, da Costa states:

It does not seem to me an exaggeration to say that in these two episodes the name created the thing named. Is this not a miracle? Or, if someone prefers, an act of magic? As the answer has to be positive, the appellation of 'magician' should be applied to Miró Quesada. [8, p. 70]

It was in this way that Miró Quesada, in presenting his master touch to the international academic community during the Third Latin American Symposium on Mathematical Logic, ineradicably left his mark on the history of paraconsistency and paraconsistent logic.

6 Identifying Participants of the III SLALM

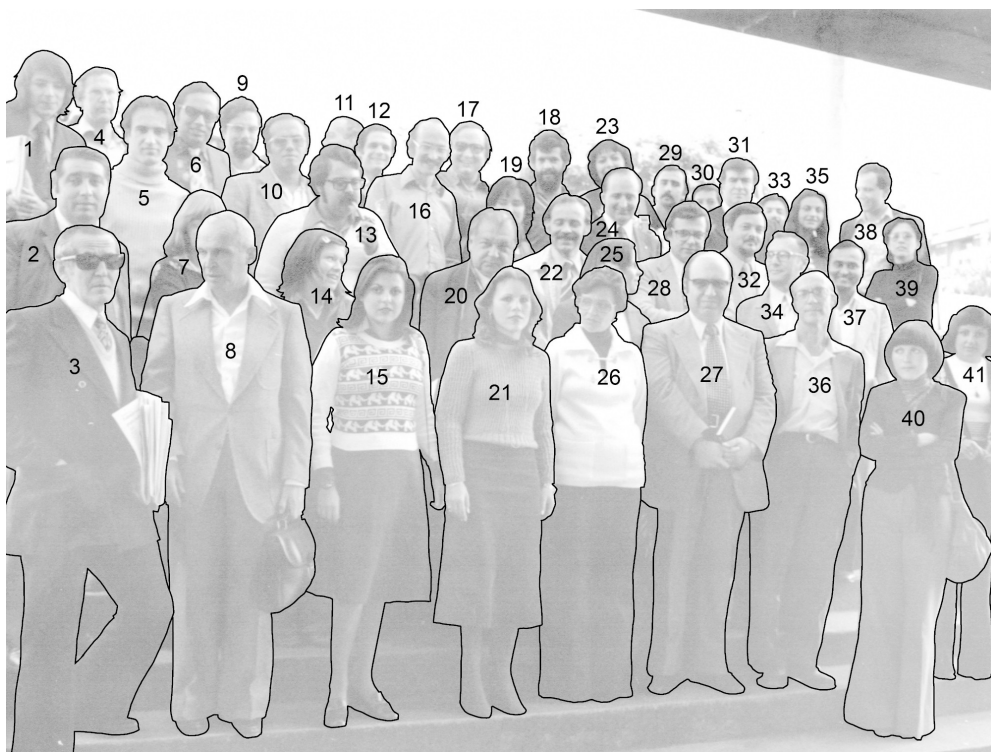


Figure 4: Identification of some participants of the III SLALM

1. Fredy Calderón Ladrón de Guevara, Peru
2. Raúl Orayen, Argentina
3. Francisco Miró Quesada Cantuarias, Peru
4. Richard Routley, Australia
5. Pablo Lerrajaja, Peru
6. Oscar Masaveu Torres, Peru
7. Irene Mikenberg, Chile
8. Roland Fraissé, France
9. Edgar G. K. López-Escobar, USA
10. Roberto Lins de Carvalho, Brazil
11. To be identified.
12. Paltônio Haun Fraga, Brazil
13. Luiz Paulo de Alcântara, Brazil
14. María Victoria Marshall, Chile
15. Cibele Alves Rodrigues, IMECC staff, Brazil
16. Istvan Simon, Brazil
17. Carlos Alberto Lungarzo, Argentina/Brazil
18. Paulo Augusto Veloso, Brazil
19. Marta Sagastume, Argentina
20. Marc Krasner, France
21. Elisabete Prado, IMECC staff, Brazil
22. Luiz Monteiro, Argentina
23. Eliana H. de Freitas Marques, Brazil
24. Florencio G. Asenjo, USA
25. Itala M. Loffredo D'Ottaviano, Brazil
26. Ayda Ignez Arruda, Brazil
27. Rolando Chuaqui, Chile
28. Roberto L. O. Cignoli, Argentina
29. To be identified.
30. To be identified.
31. Ubiratan D'Ambrosio, Brazil
32. Charles Pinter, USA
33. To be identified.
34. Newton C. A. da Costa, Brazil
35. Andrea Maria Altino Loparić, Brazil
36. Joseph Schoenfield, USA
37. Hanamantagouda P. Sankapannavar, USA
38. Amadeo Peter Hiller, Brazil
39. Iole de Freitas Druck, Brazil
40. Gloria Schwarz, Chile
41. To be identified, IMECC staff, Brazil

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