Towards a phonetic history of the voices of Spanish poets: A first experimental study on the Generation of '27

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ABSTRACT

How does the voice of a poet sound? Poetry reading, an essential component of this art, represents interesting material for phonetic studies. However, it remains an under-researched topic. This work attempts to go beyond the state of the art, providing an experimental analysis of some voices of the Generation of '27, aiming to mark the first step towards a phonetic history of the voices of Spanish poets. This research, which employs a qualitative phonetic approach and a statistical approach, has brought to light some principal elements. These include variation as a consistent element among authors and within a single author, enabling the detection of main features and sub-groups; common features marking a global grouping; and the possible variety and criticism of clusters, revealing the complexity of this speech and the effectiveness of our model to describe it.

KEYWORDS

phonetics; poetry reading; statistics; Generation of '27; voices of Spanish poets

Cap a una història fonètica de les veus dels poetes espanyols: Un primer estudi experimental sobre la Generació del '27

RESUM

Com sona la veu d'un poeta? La lectura de poesia, un component essencial d'aquest art, constitueix un material interessant per als estudis fonètics. No obstant això, encara és un tema poc investigat. Aquest treball vol anar més enllà de l'estat de la qüestió, amb l'anàlisi experimental de les veus de la Generació del '27, a fi d'iniciar el camí cap a una història fonètica de les veus dels poetes espanyols. Aquesta recerca, que combina aproximacions fonètiques qualitatives i estadístiques, posa de manifest diversos elements. Entre ells, la variació com a element consistent entre autors i dins d'un mateix autor —fet que permet la detecció de característiques principals i subgrups—; característiques comunes que marquen un agrupament global, i la possible varietat i crítica possible dels diferents subagrupaments que es poden obtenir, fet que revela la complexitat d'aquest discurs i l'eficàcia del nostre model per descriure'l.

MOTS CLAU

fonètica; lectura de poesia; estadística; Generació del '27; veus dels poetes espanyols

1. Introduction

How does the voice of a poet sound? When we speak about voice in poetry, the association that usually springs to mind consists of the concept of "voice" as a metonymy for the authors and their statement on the international scene. This usage has often been disseminated by critics and scholars in the literary sphere. Therefore, voice is considered the equivalent of a literary author as well as a part that makes itself whole. Many reflections on the concept of voice in poetry have been expressed on a theoretical level, mainly related to the question of the original music of its composition and the reader's reception. Among others, we mention the works of Blanchot (1969), Zumthor (1984), Mecatti (1985), Bologna (1992), Gasparini (2009), Serra (2011), Antomarini (2013), and Szendy (2022).

In this article, we approach the voice of poets from a different, acoustic phonetic point of view: In fact, we propose to analyse the original "poetic speech" of the authors based on audio recordings and using the tools of experimental phonetics.

The aim of this work is to present the early results of the analysis of some of the most representative voices of the influential Generation of '27 in Spain, with the intention of providing an initial contribution to a broader history of the reading of Spanish poetry. In fact, this is one of the main objectives of the research project within which this study is being developed, namely, *"Voices of Spanish Poets": Vocal Archive and Experimental Study on Poetry Reading* (VSP).

Poetic speech constitutes a strand that is still lightly explored in the sphere of experimental phonetics. However, on one side, this specific speech is a non-marginal element in the affirmation of national culture and its literature, and, on the other side, it represents material with rich phonetic information. In fact, poetic speech is distinguished by specific and original features; it can be compared in some respects to the evolution of mediated speech (radio, television, etc.), and it provides much information about the relationship between written and oral text, which usually is considered only from a prose level. Although the experimental study of poetic prosody is still somewhat limited internationally, some main approaches can be identified and, in a few cases, they are connected to an important tradition of the vocal archiving of poetry.[1] In this regard, this type of study makes an important contribution to the exploitation of the vocality of authors as a cultural heritage, thus granting them a new scientific point of view, which lends itself to interdisciplinary applications and possible new prospects.

In the Spanish-speaking area, interest in the subject of the vocality of poetry is visible in the conspicuous number of vocal archives that have been created since the second half of the 20th century to the present day. However, experimental research on data and a phonetic study model for reading poetry aloud in this linguistic area – and, more specifically, Spanish poetry – still need to be developed.[2]

This paper seeks to begin to fill this gap, providing an initial contribution that combines a qualitative-comparative phonetic investigation with a statistical view of a sample of recordings belonging to seven Spanish authors of the same generation, the so-called Generation of '27, which also marks the first available voices to be acoustically investigated.[3] In this way, we attempt to answer the following question: "How does the voice of a poet sounds?".

[1]   For an initial literature review on the subject, see the work of Colonna (2021, pp. 77–134) and Colonna & Romano (2023). For the Ibero-Romance languages, in particular, see Madureira (2008) and Barbosa (2022, 2023).

[2]   Among the works on the topic of voice in Spanish authors, see Mistrorigo (2018). For an empirical-phonetic introductory work on Spanish-speaking poets, based on the theoretical framework of Spanish scholars of Spanish poetry rhythm (e.g. Gili Gaya and Alonso), see Colonna (2022*b*).

[3]   We mention that one of the purposes of future studies is to consider the previous readings by Juan Ramón Jiménez, which require individual attention and cannot be included into a 'generation' group. Furthermore, this generation work is only an orientation tool for a wider history of poetry reading.

2. Towards a phonetic history of the voices of Spanish poets: The first nucleus of the Generation of '27

To trace a history of the reading of 20th century Spanish poetry, following the model of Colonna (2022*a*), we decided to select authors according to a chronological criterion based on a predominantly generational datum, which finds its main reference in the groupings proposed by the critics (see, for example, "the Generation of '27" or the "Generations of the '50s and '70s"). Another criterion is substantially technical: the presence or absence of sound sources of the authors. In this regard, we begin the project of tracing the evolution of reading in Spanish poetry starting with a short list of authors of the Generation of '27, with the aim of identifying an initial nucleus of results that are also useful for the next possible categorisation and classification purposes based on the styles of reading.

2.1. Presentation of the data

Given the peculiarity of the data, we first present an overview regarding the grouping of authors selected, starting with the generational definition to which we refer.

The Generation of '27 refers to a group of Spanish writers and poets of the 20th century who became known on the cultural scene around 1927. In that year a tribute to Luis de Góngora on the third centenary of his death in Seville was sponsored by the bullfighter Ignacio Sánchez Mejías. The authors included in the generational term were brought together by other elements, such as the focus on poetry, friendship, and a common "generational language", even though recent studies have reconsidered the critical construction and "historical reality" around this group (Neira Jiménez, 2019). In any case, the term generation, which appeared in the first publication of Dámaso Alonso (1948), lends itself to a certain criticality, which was already manifested within the group itself and in the second half of the last century. However, this discussion lies beyond the scope of the present study.

Numerous authors who have marked the history of Spanish literature belong to this group. Of these, not all of them have preserved acoustic data: among them, the well-known case of García Lorca and many of the women authors included. To conduct an initial study, we selected 7 authors, trying to adopt a gender-equality principle as much as possible, including in this study the voices of women authors of the generation whose recordings were traced. In this respect, we relied on Merlo (2010).

More specifically, we included the following poets in this study, listed in alphabetical order and including five men poets and two women poets: Rafael Alberti (1902–1999), Vicente Aleixandre (1898–1984), Dámaso Alonso (1898–1990), Luis Cernuda (1902–1963), Ernestina de Champourcín (1905–1999), Carmen Conde (1907–1996) and Pedro Salinas (1891–1951). For each poet, we have identified three different readings; where possible, when there are multiple readings of the author, recordings of texts belonging to different books have been chosen to offer greater stylistic variety. Otherwise, an attempt was made to choose varied reference text types whenever possible. Among the selected poems, nine are metrical and the others are free verse.

To retrieve the sound materials, a search was conducted among the recordings present in major databases, including Residencia de Estudiantes de Madrid; Biblioteca Nacional de España, particularly the Archivo de la palabra, 1931–1933;[4] The Archive of Hispanic Literature on Tape (AHLOT), in the Library of Congress in Washington D.C., 1943–2018;[5] Voz Viva de México y de América Latina,

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[4] These original recordings were made by the Centro de Estudios Históricos in Madrid between 1931 and 1933 and were published as "*Voces de la Edad de Plata* (1898–1936)" by the Residencia de Estudiantes in 1998.

[5] Since 1943, the PALABRA Archive at the Library of Congress, historically known as the Archive of Hispanic Literature on Tape (AHLOT), has been curated by the Library of Congress Hispanic Reading Room. It mainly features readings by Spanish, English, and Portuguese poets.

1960–2018;[6] RTVE Radio Televisión Española; and the main poetry-only vocal archives online.[7]

For this study, the data consist of recordings released by two publishing companies: Visor (CDs in the collection of Visor de poesía, including a selection of the work of an author and named *Antología personal* [Personal Anthology]) and RCA Spain (from the vinyl *Diez poetisas españolas dicen su poesía amorosa* [Ten Spanish women poets say their love poetry], 1971).

The first case is a publishing house that, at the end of the last century, published recordings of 20th century poets from different contexts,[8] often together with the textbook or libretto of the texts. We could say, in a certain sense, that this continued and evolved a model that had begun earlier in the French and American context of greater or lesser collaboration between academic archives and record labels in the first half of the 20th century (see Mustazza, 2019,

and Colonna, 2021). In fact, the collection of Visor includes the re-publication in the Spanish world of Hispano–American materials of Spanish authors connected to the Americas for many reasons.[9] In particular, the Washington AHLOT and the UNAM Voz Viva de México may have been the main sources of Visor's collection.[10]

In the second case, namely, the RCA project, we find an anthological work produced by a record company which, in the same years, was also active on the international scene. An example is the case of RCA Italia, which, as Mossa (2023) explains, was dedicated to the voices of poets in a series (*La loro voce, la loro opera*) in 1962 but was discontinued in 1963; it was the only concrete Italian attempt to disseminate a series of single author's records on a large scale. In the Spanish framework, we find some anthologies made in the late 1960s and the early 1970s that include representative voices of poets.[11] Among them, a specific one dedicated only to

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6 Radio UNAM, founded in 1937, enables the recording, transmission, and conservation of poetry recordings.

7 A presentation of the international digital poetry vocal archives can be found in Colonna (2021).

8 We arrive at this conclusion through a cross-referencing of data, aiming to provide a hypothesis for the reconstruction of sources, valuable for us to establish a more precise date for the data. This is the case for the following readings: the recordings by Rafael Alberti and Luis Cernuda, edited by Universidad Nacional Autónoma de Mexico (UNAM), for the project Voz Viva de México in 1975, of which Cernuda's LP dates back to 1965 (for more details see Cultura UNAM, 2020, 2023); the readings at the Washington Library of Congress by Pedro Salinas for the AHLOT, recorded on December 14, 1950 (additional metadata available at Salinas & AHLOT, 1950); the recordings by Vicente Aleixandre, recorded on instantaneous discs in 1950 by the Sociedad Española de Radiodifusión, Madrid, for the AHLOT and then published in the same year by the AHLOT at the Library of Congress (see Aleixandre & AHLOT, 1950). Further information can be found also in Dorn (1974) and on the website *Cecilia*, "*Colección Voces que dejan Huellas*". Even though recordings by Dámaso Alonso dating back to May 9, 1953, at the Library of Congress Recording Laboratory, Washington, are available in the AHLOT (see Alonso & AHLOT, 1950), the voice analysis (see § 2.3) and the lack of access to the Library data does not allow us to trace back for certain the voice of this study to these recordings.

9 In the case of two of the selected authors, Cernuda and Salinas, the experience of migration and the international context of travelling represent an important variable not only in the place of origin of the source (namely, recordings made and edited in America[9]) but also in the possible influence of this international experience in their reading style (see Amelia Rosselli and Giuseppe Ungaretti for the Italian panorama, as Colonna, 2022*a*, explains).

10 The *Voz Viva de México* and the *Voz Viva de América Latina* collections were started in 1960 by Efrén del Pozo (dir.) and others after a first previous recording in 1959 of Alfonso Reyes. Metadata about recording supports are available (e.g., the use of AMPEX 350 recorder, RCA microphones, SCULLY heads and printed on three 33rpm LP discs) as well as the place of recordings (laboratories of Discos Columbia de México). Today, the catalogue of voices in the *Voz Viva* collection of the UNAM is probably the largest and most important collection of writers in their own voice in the Spanish-speaking world, after the Archive of Hispanic Literature On Tape of the Library of Congress (AHLOT) in the United States. For further information see the websites of both the institutions, as well as Ortiz Moreno (2018, 2024).

11 We mention the following vinyls: *Diez poetas españoles dicen su poesía taurina* [Ten Spanish poets say their bullfighting poetry] (1969), *Diez poetas españoles dicen su poesía deportiva* [Ten Spanish poets say their sportive poetry] (1969), and *Diez poetas españoles dicen su poesía flamenca* [Ten Spanish poets say their flamenco poetry]

women poets was selected for this work as a unique case, also comparing to the international production.[12]

The authors included in this research are some of the most representative and known poets of their generation and reveal a varied yet comparable geographical distribution in addition to various types of writings at different levels, metrical structure included.

Table 1 presents the selection of the considered data, including the metadata essential for this study, which are listed for the purposes of a more complete analysis: author, title of the poem, publication year of the poem, and publication year of the recording.

Providing further introductory details regarding the data we analyse in Section 2.2., we mention that these authors were all born in Spain and that two of them died in America, following emigration: Cernuda in Mexico City and Salinas in Boston. The authors all read in Spanish and are, respectively, from the following areas: two from Madrid (Dámaso Alonso and Pedro Salinas), three from Andalusia (Luis Cernuda, Vicente Aleixandre and Rafael Alberti), one from the Basque Country (Ernestina de Champourcín), and one from Murcia (Carmen Conde). The selected authors partially represent some diatopic varieties. However, in this study, although this variable is present, it will not be considered as a criterion of analysis. Overall, the texts corresponding to these recordings have already been published in the authors' collections (except for a

text by de Champourcín); however, little discrepancies were found in some cases between the published text to which we refer and the text read aloud.[13]

Twelve are free verse texts, and nine have a fixed metric. The poems come mainly from different collections for each author; exceptions are Alonso, de Champourcín, and Conde. Finally, as mentioned above, the recordings for each author derive from the same source.

In many cases, it was difficult to obtain direct information on the exact date and location of the recordings as well as further details regarding the recording medium used or whether the performance was read or recited from memory. However, in the light of the previously investigated international panorama and the audiovisual media received, we speak here of poetic "readings". Considering the gap between the publication and recording dates and taking into account our sources and chronological reconstruction, we can assume, on the one hand, that Salinas and Aleixandre's recordings date back to the early 1950s. Meanwhile, the voices of Alberti and Cernuda can be traced to the early 1960s, predating Alberti's return to Europe and Cernuda's death in the same period.[14] On the other hand, the recordings by de Champourcín and Conde likely date back to the 1960s.[15] The potential dating of Alonso's readings would require further inquiry, and they could either belong to the 1950s or be even older (1980s) (see section 2.3).

(1969). See also *Doce poetas en sus voces* [Twelve poets in their voices], Aguilar, 1963.

[12] The LP includes more in detail the voices of the following poets: Clementina Arderiu, Ernestina de Champourcín, Carmen Conde, Concha Lagos, Mercedes Saori, Pino Ojeda, Susana March, Angelina Gatell, Acacia Uceta, and Maria De Los Reyes Fuentes.

[13] Further philological studies would prove interesting in this regard, to investigate whether these are earlier or later versions or occasional lapses or changes that occurred with the reading only. However, we will not dwell on this aspect, as it is not decisive for our analysis.

[14] The editing of the recordings by UNAM dating from 1975, therefore, would lead one to deduce that the recordings are earlier and were made in Latin America, presumably during the period of migration of the authors (considering also that UNAM's Voz Viva de México programme began in 1960 and, in the case of Alberti, the exile in South America lasted until approximately that period).

[15] Since the publication of the voices of the women poets dates from 1971, it is assumed that the recordings are earlier or, at most, from the same year.

Author	Title	ED	PYP	AC	PubR	PYR
Dámaso Alonso	Los contadores de estrellas [Star counters]	*Poemas puros. Poemillas de la ciudad.* Galatea	1921	ALONSO1	Visor	2001
	¿Cómo era? * [How was it?]	*Poemas puros. Poemillas de la ciudad.* Galatea	1921	ALONSO2	Visor	2001
	Monstruos [Monsters]	*Hijos de la ira.* Revista de Occidente	1944	ALONSO3	Visor	2001
Luis Cernuda	Déjame esta voz * [Leave me this voice]	*La realidad y el deseo* (Los placeres prohibidos). Ediciones del Árbol, Cruz y Raya / Fondo de Cultura Económica	1936/ 1958	CERNUDA1	Visor	1996
	Hacia la tierra * [Towards the earth]	*La realidad y el deseo* (Como quien espera el alba). Losada / Fondo de Cultura Económica	1947/ 1958	CERNUDA2	Visor	1996
	La vida * [The life]	*La realidad y el deseo* (3rd ed.) (Con las horas contadas). Ediciones del Árbol, Cruz y Raya / Fondo de Cultura Económica	1958	CERNUDA3	Visor	1996
Rafael Alberti	Si mi voz muriera en tierra * [If my voice died on the ground]	*Marinero en tierra.* Biblioteca Nueva	1924	ALBERTI1	Visor	1997
	Balada del andaluz perdido * [Ballad of the lost Andalusian]	*Balada y canciones del Paraná.* Losada	1954	ALBERTI2	Visor	1997
	A Pablo Neruda, con Chile en el corazón * [To Pablo Neruda, with Chile in my heart]	*Fustigada Luz.* Seix Barral	1980	ALBERTI3	Visor	1997
Vicente Aleixandre	Niñez *[Childhood]	*Ámbito.* Imprenta Sur	1928	ALEIXANDRE1	Visor	1997
	Nacimiento del amor [Birth of love]	*Sombra del Paraíso.* Adán	1944	ALEIXANDRE2	Visor	1997
	Rostro final [Final face]	*Poemas de la consumación.* Plaza y Janés	1968	ALEIXANDRE3	Visor	1997
Pedro Salinas	2 – Presagios [2 – Omens]	*Presagios.* Biblioteca Índice	1924	SALINAS1	Visor	1996
	Sin Voz, Desnuda [Voiceless, Naked]	*Seguro Azar.* Revista de Occidente	1929	SALINAS2	Visor	1996
	Las oyes cómo piden realidades [You hear them how they ask for realities]	*La voz a ti debida.* Signo	1933	SALINAS3	Visor	1996
Ernestina de Champourcín	Amor * [Love]	*Cántico inútil.* M. Aguilar	1936	DECHAMPOURCIN1	RCA	1971
	Soledad * [Loneliness]	*Cántico inútil.* M. Aguilar	1936	DECHAMPOURCIN2	RCA	1971
	Seré tuya sin ti... [I'll be yours without you...]	*Poesía a través del tiempo.* Anthropos	1991	DECHAMPOURCIN3	RCA	1971
Carmen Conde	Hallazgo [Discovery]	*Ansia de la gracia.* Editorial Hispánica	1945	CONDE1	RCA	1971
	Suma transida [Transited sum]	*Iluminada tierra.* Talleres Tipográficos de Santiago Julián Rodríguez	1951	CONDE2	RCA	1971
	Confusión [Confusion]	*Iluminada tierra.* Talleres Tipográficos de Santiago Julián Rodríguez	1951	CONDE3	RCA	1971

Table 1. Summary table of analysed data: author; title of the poem; title of the book and the publisher (ED); publication year of the poem (PYP); audio code (AC); publishing of the recording (PubR); publication year of the recording (PYR). Asterisks (*) mark the poems with metric scheme. The original numeration of the codes follows the data collection of the VSP project and research archive. For this study, which presents an essential comparative component, we chose to use the surname of the author as the criterion of identification of the recording for the study.

2.2 Method

To analyse the poetic readings of the selected authors with a phonetic approach, we employ a methodology developed for the study of the voices of Italian poets (Colonna, *2022a*), which has already been partially applied to Spanish (Colonna, 2022*b*) and English (Colonna & Romano, 2022). We chose to employ this qualitative study model, making use of the VIP-Radar tool, which we refer to as VIP/VSP-Radar (being its first application to Spanish), to examine this corpus in detail and comparatively, considering the essential parameters for a phonetic analysis of poetry reading. Moreover, later we present a statistical analysis of the same data (Section 3), to provide a quantitative approach.

In the next sections (2.2.1 and 2.2.2) we first introduce the annotation system, then the data extraction and description which we adopted. All of this work is based on the essential premise that poetic speech requires a specific approach, able to consider the acoustic dimension of poetic prosody in relation to the textual dimension of the source composition.

2.2.1 Annotation

The annotation employs the procedure by Colonna (2022*a*) and was achieved on *Praat* software (Boersma & Weenink, 1992–2022). On the assumption that poetic prosody must be considered in relation to the written text, this method detects four annotation levels, which enable us to highlight both textual and acoustic dimensions. A summary table and an example of annotation are provided, respectively, in Table 2 and Figure 1.

The detected pauses (Ps) go from *pb* to *pll*, indicating short pauses (*pb*), medium pauses (*pm*), long pauses (*pl*), or very long pauses (*pll*). The thresholds and criteria are explained in Colonna (2022*a*, pp. 57–58). Resumed as follows: *pb* (0.1–0.4 s), *pm* (0.4–0.6 s), *pl* (0.6–1 s), *pll* (> 1 s). We marked as *P* the interruption between stanzas.

Levels		Description
VS	verso	*verse*. This level includes the text of the verse, preceded by the corresponding line and stanza number (es. "1§1 – El mar").
EN	enunciato	*poetic utterance*. The poetic utterance is considered an independent linguistic act with a terminal boundary and a unitary prosodic signification, which may consist of one or several internal sections. The identification occurs on a perceptual level.
CP	curva prosodica	*prosodic curve*. Interpausal units, which can be further divided by intonation units.
PR	parola ritmica	*rhythmic word*. Tonal-accentual units on which the rhythmic cadence falls, making the prosodic *continuum*. They can include one or more words phonetically reproduced in a single accented unit. The identification occurs on a perceptual level.

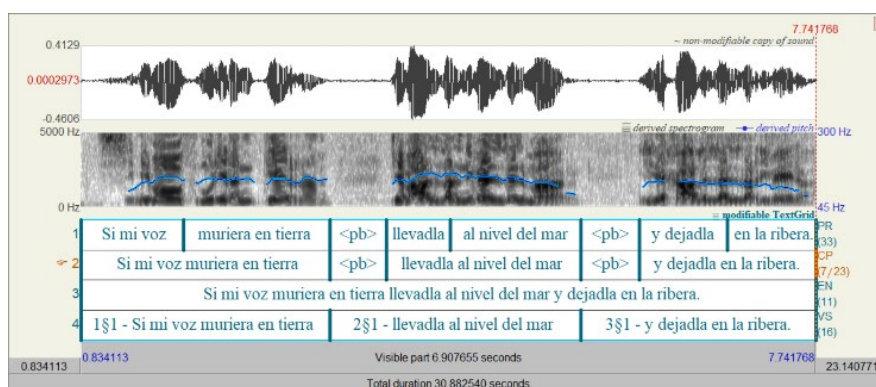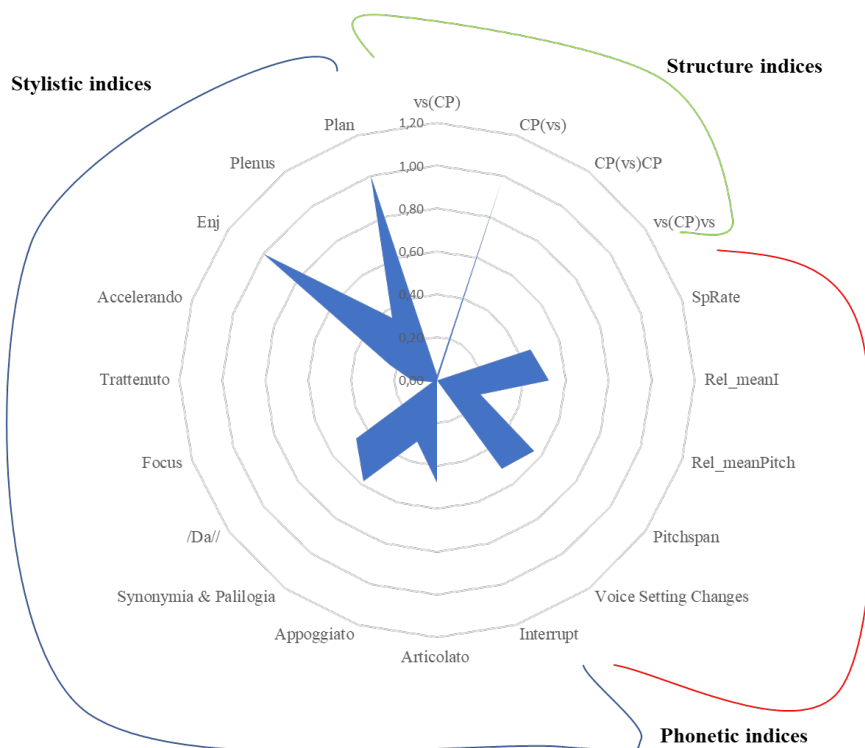**Table 2.** Annotation levels.

Figure 1. Praat screenshot, depicting an example of the four levels of annotation (VS, EN, CP, PR).

Figure 2. Example of VIP/VSP-Radar.

2.2.2 The VIP/VSP-Radar

The VIP/VSP-Radar (see Figure 2) includes 20 indices specifically identified for poetic speech. They can be grouped into three main types.

a) Organisational indices, linked to the organisational level of the acoustic data in relation to the textual layout.
b) Purely phonetic indices traditionally considered.
c) Stylistic indices, expressly identified and coined for poetic speech in Colonna (2022*a*).

We begin introducing the more "traditional" phonetic indices. They are the following: speech rate (*SpRate*), namely, the ratio between phonetic syllables and total CPs duration;[16] relative mean intensity (*Rel_meanI*);[17] relative mean pitch (*Rel_meanpitch*);[18] pitch span (*Pitchspan*) in semitones;[19] and tonal and/or register jumps, perceptually identified (*Voice Setting Changes*).

The other indices are summarised in the following two tables: The first one (Table 3) refers to the organisation indices (first type), which describe the type of prosodic curve (CP) employed, depending on its measure with respect to the verse, namely, verse curve, hemi-verse curve, interverse curve, and bi-/polyverse curve (as in the nomenclature by Colonna, 2022*a*).

In Table 4 we resume the stylistic indices (third type). This selection is identified at a perceptual level: *accelerato, rallentato,* focus, /Da//, and synonymia and palilogia intonation. Furthermore, the name of these parameters is inspired by the musical

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[16] Obtained using the script developed by Mairano (2011), for the extraction of the durations noted in the TextGrids. This allowed us to sum up all the speech durations, isolating the pausal ones, and then calculate the ratio between the number of syllables (perceptually identified) and the overall duration.

[17] Automatically extracted by *Praat*, measured in dB, and divided by 100.

[18] Obtained through the *Praat Vocal Toolkit* plugin, developed by Corretge (2012–2023), measured in Hz, and put in ratio to 600 Hz.

[19] Manually extracted, considered as a reference Bonnet et al. (1989) and Stevens (1935). It is in ratio of 24 semitones.

language (agogics and musical Baroque rhetoric): *accelerato, trattenuto, appoggiato, articolato,* and synonymia and palilogia intonation.[20]

For each of the 21 total recordings, we produced an annotation and a VIP/VSP-Radar. In Section 2.3 we describe the results of the analysis, providing and commenting on seven comparative VIP/VSP-Radars, each one describing the three different

recordings by an author (Figure 3). Through this tool we aim to highlight the possible convergence or divergence in each author's reading style. Additionally, we attempt to determine whether correlations between different types of texts and different reading styles, as well as further elements, are detected and whether any grouping is possible. To be more complete and to focus on some aspects, we insert some histograms functional to the data description.

Organisational index		Description
vs(CP)	versi-curva	*verse curves*. Prosodic curves (CPs) coinciding with the line of the verse on the page (VS)
CP(vs)	curve emiverso	*hemi-verse curves*. Prosodic curves (CPs) encompassing a portion of the verse (VS)
CP(vs)CP	curve inte-verso	*interverse curves*. Prosodic curves (CPs) that, when placed between two verses (VSs), include a portion of both
vs(CP)vs	curve bi-poli-verso	*bi-/pol-verse curve*. Prosodic curves (CPs) which include two or more verses (VSs) in their entirety

Table 3. Organisational indices.

Stylistic index	Description
Accelerato	Perception of acceleration in the speech rate
Trattenuto	Perception of slowing down in the speech rate
Plenus	Ratio of CPs and Ps duration
Focus	Focus feature intonation
/Da//	Declarative intonation of different types (e.g., assertive, poetic declarative*…)
Interrupt	Fragmentary pronunciation, providing an effect of interruption, in CPs (e.g., by lengthening the beginning of contoids) and/or in the use of pauses
Appoggiato	Stressing feature, marking the PRs in the CPs
Articolato	Stressing feature, marking the CP units inside the ENs, through pauses' scansion
Synonymia & Palilogia (Intonation)	Rhetoric of intonation: figures of repetition (on the same tone, "palilogia", or on different tones, "synonymia", with possibility of variation) among CPs' melodies
Enjambment	Prosodic reproduction of the textual enjambment by a pause
Plan	Ratio of ENs and VSs, as a planning of poetic speech

* This kind of declarative is presented in Colonna (2022*a*) and is characterised by a terminal boundary not totally descending, presenting a final medium-low level. Many times, it can be also associated with an explicative nature. For this reason, it is also defined as an "explicative declarative".

Table 4. Stylistic indices.

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[20] For synonymia and palilogia, see López Cano (2000) and Civra (1991).

2.3 Results

As explained earlier, these selected readings, although published relatively recently – most of them dating back to the 1990s and 2000s – turn out to belong to earlier times, from the beginning of the 1950s onwards. By cross-referencing data from other sources (cf. Section 1) and with authors biographical information it is possible to make many of these audio recordings probably belong to previous archives as mentioned before and mostly date them approximately to the period from 1950 to 1970. Anyway, further analysis on the dating would be valuable.[21] These chronological data allow us to trace quite a coherent first picture on a timeline that aims to provide a description of recordings to be considered and compared in the future.

Overall, yet at a first perceptual level, we find in these readings a prevalent style that we could partly define as declamatory and that requires closer and more in-depth analysis. We can detect this style as typical of an early phase in the history of the 20th century poetry reading, which is also in line with the evolution of media prosody, as explained in the following paragraphs. This style finds its counterpart in the Italian landscape, specifically within the 'first radio-television' phase proposed by Colonna (2022*a*), which extended roughly from the mid-1960s to the 1970s[22]. For Italian poetry reading belonging to the first radio-television period, in conjunction with a declamatory style, many features were detected as typical in comparison with the later second radio-television. These included a slower speech rate, a longer duration of pauses, and a higher use of voice setting changes. The period considered in this study shows the existence of many previous recordings for Spanish poets and is slightly shifted backwards in time, when compared with the Italian first radio-television, which has started approximately 15 years later. However, taking into account the diverse political scenarios and the rhetoric of the regimes in Spain and Italy (and in those countries that welcomed exiled authors), as well as the different histories of the development of radio-television in these countries which, in turn, condition the different types of sources within these contexts (vocal archives collected in publications versus radio-television performances), additional comparisons regarding the influence of these aspects on mediatised speech – along with the shared progressive change in familiarity with technological tools – would be insightful.

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[21] As already mentioned, a complete reconstruction of all the data would suggest exact recording dates for some authors. In particular, the case of Alonso requires special reflection. In fact, the recovery of one of his recordings in the Archivo de la Palabra of the National Library of Chile helps us to compare a previous recording with a later reading. The Chilean audio is dated 1969, in Santiago (National Library), and also includes the reading of a same poem present in our selected recording ("*Los contadores de estrellas*"). A comparison among them reveals a common prosodic fragmentation as well as common intonations. However, the 1969 audio presents a significantly lower recording quality, with much background noise, and a significantly lower average mean frequency f_0. These elements, coupled with the crucial fact that the original file recovered by Visor is an .mp3, strongly indicate the existence of an earlier version associated with a younger Alonso. This version seems to have been superseded by a later one, revealing a compelling case of vocal aging, as manifested in the increased average frequency f_0. during older age (for further details, refer to Moreno Méndez et al., 2010; Pettorino, 2014; Pellegrino, 2019).

The contrast between these two recordings suggests a temporal gap. Thus, we can speculate that the audio in this study may date back to the 1980s, closer to the poet's final phase; Alonso passed away in 1990. However, the identified variations observed in other recordings from AHLOT available online (e.g., Aleixandre) also prompt us to consider the hypothesis of a margin of error, likely due to the unknown conditions of recording and data preservation. In any case, the comparison yields additional intriguing insights, particularly in terms of stylistic and prosodic coherence (structure/intonation) over time.

[22] Colonna (2022*a*), aligned with Umberto Eco's theory of 'paleo-' and 'neo-' radio-television, presents a periodization of 20th-century Italian poetry reading to establish the first History of Italian poetry reading. This framework, primarily documented by radio and television sources, enabled the identification of two main groups, as further described below: the 'first radio-television' (from the mid-1960s to the 1970s) and the 'second radio-television' (from the mid-1980s to the 1990s) periods.
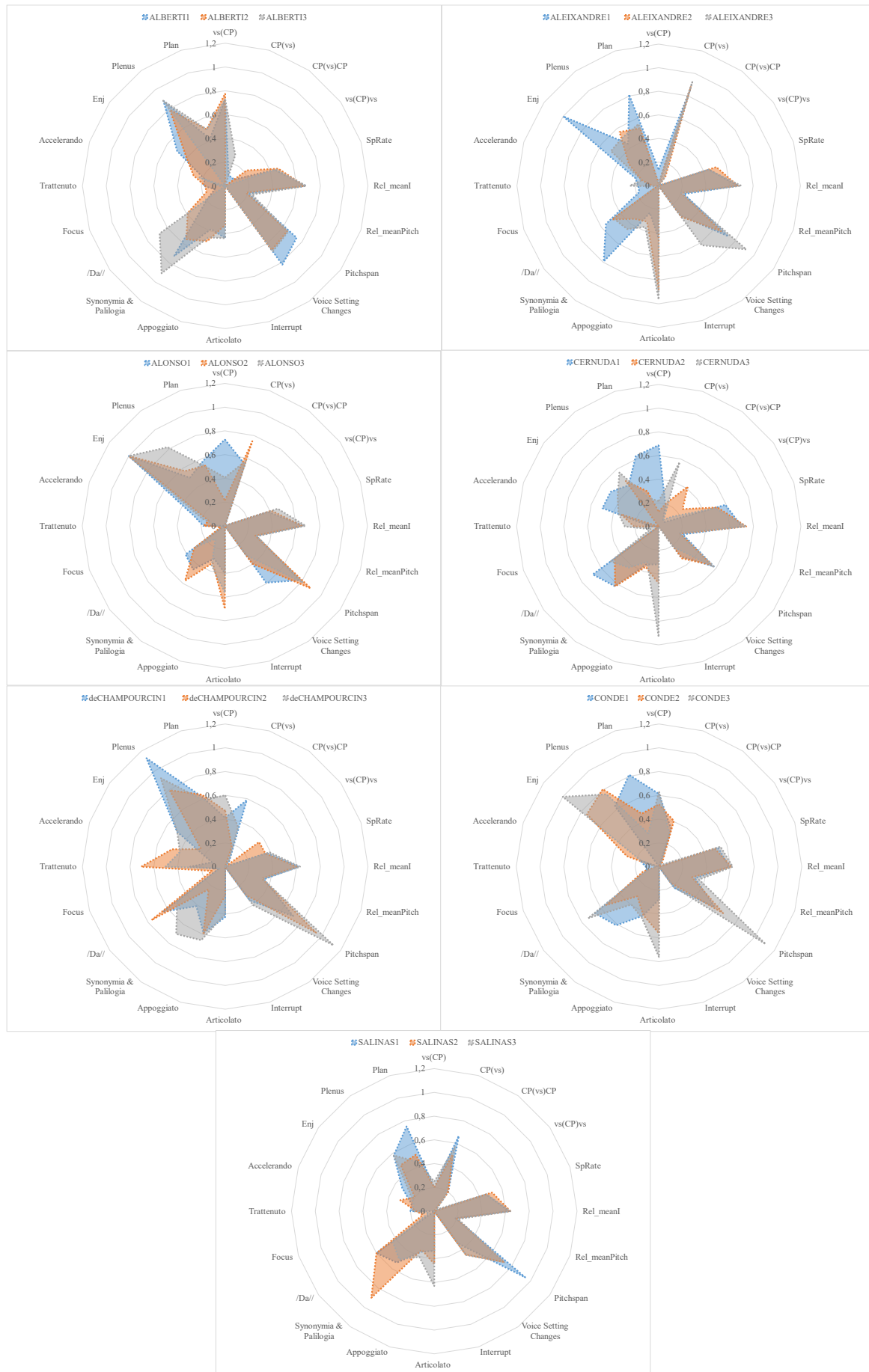
Figure 3. VIP/VSP-Radars of the seven authors, grouped by a core of three readings.

The VIP/VSP-Radars enable possible matches to be highlighted and Figure 3 depicts the VIP/VSP-Radars of the seven authors, grouped by a core of three readings on which we comment.

In more detail, we first mention the absent or very limited phenomena that the seven groups have in common: the total absence of interruption in all the readings,[23] the highly limited use of focus, and the predominantly limited use of interverse and bi-/polyverse curves, except for two peaks in Cernuda and deChampourcin.[24]

The prediction of some convergences among three different readings by an author finds confirmation: In particular, this is the case of mean relative intensity, mean relative frequency, and speech rate. In the first case, the mean relative intensity (dB), tends to be similar not only among the three readings of each poet but also overall in its mean value, which is approximately 66 dB. Regarding the mean relative frequency, we can see that the values tend to overlap, also confirming the hypothesis of the same recording session for every poet. It is quite the same for the speech rate, revealing that we cannot speak about a representative variation for this index, although a slight variation is detectable in isolated cases, namely, Cernuda1, Alonso3, and Aleixandre2.

The possible variation in speech rate at a perceptual level is tracked in the Radar by *accelerando* and *trattenuto*. The more "variable" readings are those by de Champourcín, who reaches the peak of *trattenuto* but also an average level of *accelerando*. The perceived fluctuation in this marked cadence is also confirmed by the standard deviation (s.d.) (see Figure 3).

To check and compare these data at an acoustic level and to explore some related aspects in more depth, we produced three histograms (Figures 4–6) which allow us to consider in more detail, with a comparative approach, all of the readings of all of the authors, analysing the following indices: speech rate, mean duration of CPs, and mean number of syllables per CP. This type of description of the data enables rapid detection of the groups of more similar values among all 21 readings, presented in alphabetic order.

On one side, we find in Figure 4 a confirmation of a quite similar speech rate among these readings and, in general, moderated inner variation, as the levels of st.dev. indicate. The variation is highly limited in the following readings: Alberti2, Conde1, and deChampourcin3. On the other side, we find the slowest values of speech rate in de Champourcín and the highest in Cernuda and Conde. However, a variation among different readings by the same author is quite detectable, and most of the nearest speech rate values of an author group only two readings.

Integrating these data with the values of the mean number of syllables per CP (see Figure 5), we find a histogram with a different order of authors. More particularly, we find a more representative variation among the readings, from four to 11 mean syllables per CP. The lowest values are those of Aleixandre1 and Alonso1, whereas the highest are those of deChampourcin1, Cernuda1, and deChampourcin3. Furthermore, the highest variation in the distribution of the number of syllables per CP is found in Conde2, followed by Salinas2, Salinas1, and Conde1 (whose texts are also free metrics). Furthermore, comparing texts with or without metrics, we find that major or minor variation is found in both types of texts.

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[23] We recall in the Italian panorama the significant presence in Ungaretti's readings and then also their use in the voice of Amelia Rosselli (Colonna, 2022*a*).

[24] The use of this type of curve is not totally absent but is severely limited compared to the clearly prevalent verse curve or hemi-curve visible in 19 of 21 readings (Cernuda2 and deChampourcin2, followed by Alberti1, are special cases).
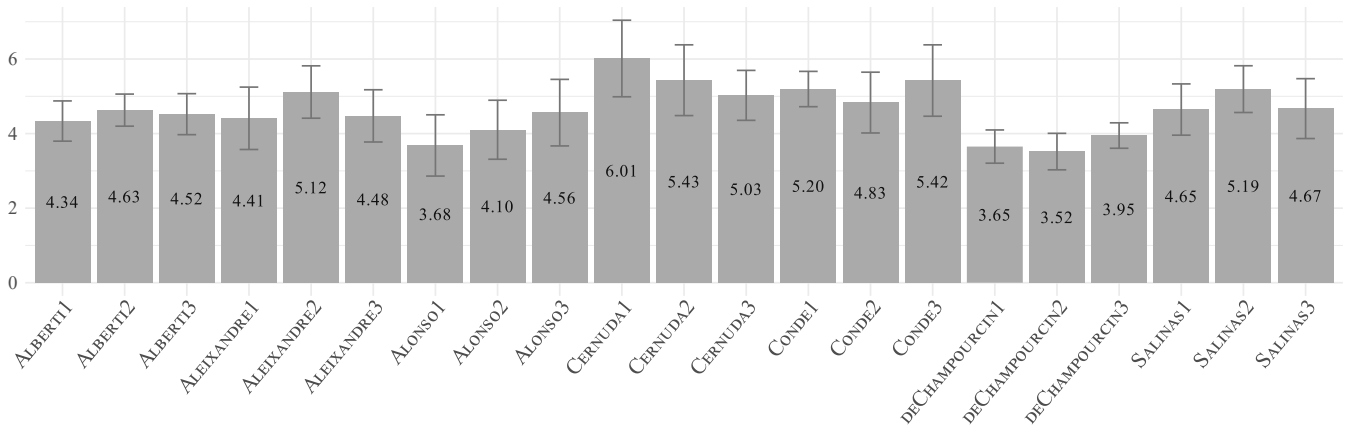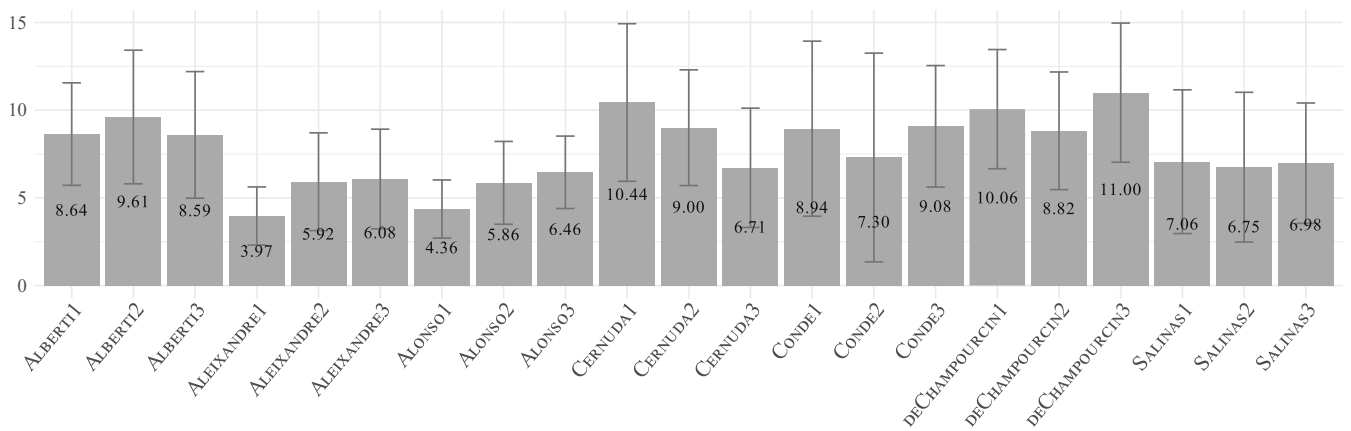
Figure 4. CP-SpeechRate.
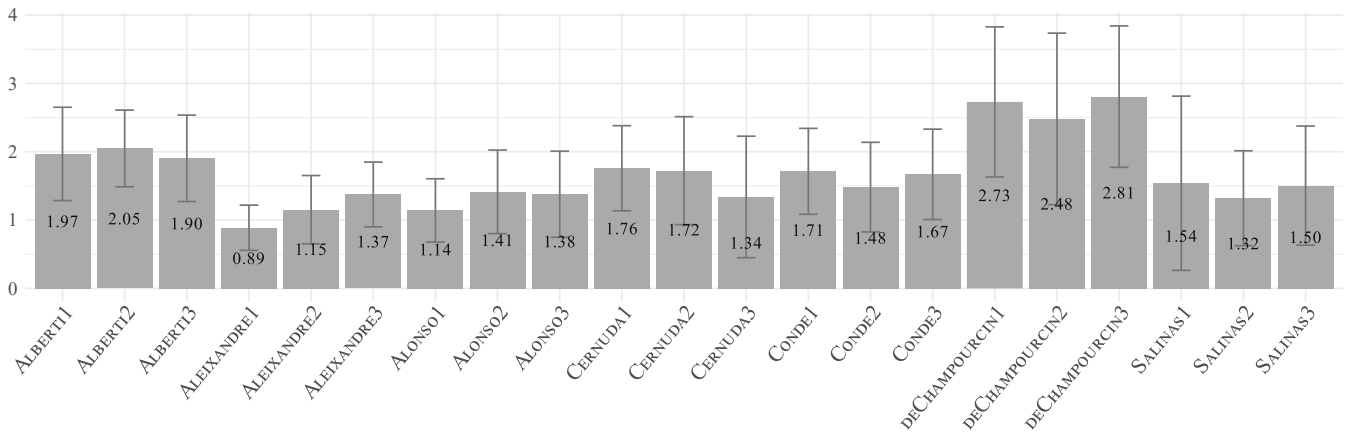

Figure 5. Mean-NrSyllable/CP.

Figure 6. Mean-CP-Duration.

Considering the histogram related to mean duration of CPs (Figure 6) and comparing it with the previous graph (Figure 5), we find a partial correspondence between higher levels of mean number of syllables and higher duration of CPs (e.g., in ALEIXANDRE1, ALONSO1, DECHAMPOURCIN3). The highest st.dev. are quite divergent; even the highest is

confirmed by SALINAS1, followed by CERNUDA3, SALINAS3, and SALINAS2.

Following the analysis of the VIP/VSP-Radar, we continue paying particular attention to the variation between different authors and within the same author. We begin with the organisational indices

previously introduced: On the one hand, also at an individual level and comparing the different readings by a same author, we find a general alignment to verse curve and hemi-verse curves (the most widely used CPs in these 21 readings). This is the case of Alberti, who prefers, although with a variation, a metrical reading; Aleixandre, with the highest peak of hemi-verse curves; and Salinas, who combines a prevalent use of hemi-verbose curves with one of verse curves.[25] On the other hand, a greater individual variation is detected with Cernuda, de Champourcín, and Alonso: They reach a maximum peak of verse curves in one of three readings, distinguishing this as metrical (i.e., DECHAMPOURCIN3, CERNUDA1, ALONSO1). A further case is the case of Conde.

Considering the features concerning the Pitchspan index, the following results emerge: Except for the readings by Cernuda and Alonso, which indicate a similar level in all of their recordings, the index reveals tendentially varied behaviour for each author. ALBERTI1, ALEIXANDRE3, SALINAS1, DECHAMPOURCIN3, and CONDE3 stand out as cases of highest within-author variation. However, it is with the women voices that we find the highest peaks of the seven voices: The melodic leap of their readings extends over a little more than two octaves (about one eighteenth), also due to the rich variety of registers, such as a creaky voice.

Similar high peaks are found in the connected index of voice setting changes, namely, with ALBERTI1, ALEIXANDRE3, and ALONSO1.[26] This parameter

reveals information about perceived tonal and register changes and helps us to frame the reading style at a perceptual level from an overall melodic point of view. The readings by Alberti reach the highest levels of all, an average of 0.7, and are featured by a declamatory elocution style.[27] Other high levels coincide with a common type of style, which can also be described as emphasised and, in a way, theatricalised (see ALONSO1).[28] Contrarily, the lowest levels are reached with Cernuda, de Champourcín, and Conde. This description leads us to confirm a split hypothesised at a perceptual level, based on the elocution style. This convergence allows for the detection of two main groups, depending on the reading elocution style and the voice setting changes. Following this grouping, we find, on the one hand, a declamatory/emphasised poetic speech detached from a more natural/narrative style.

It would be worth considering this grouping in the light of the first and second radio-television defined by Colonna (2022*a*) into the history of Italian poetry reading, where these two main approaches are detected.[29] Following this criterion, we can, in fact, group Alberti, Aleixandre, Alonso, and de Champourcín as more declamatory readings on the one hand. This style would seem to belong to an earlier approach to reading, influenced by many cultural and historical aspects, while, on the other hand, readings would seem to tend towards more naturalness and narration with Cernuda and Conde[30]. However, we would place Salinas in the first group due to the variety of voice setting changes and on the borderline with the second group, due to the absence

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[25] We highlight that, among the metrical poems, only the readings by Alberti are produced with a metrical reading through verse curves.

[26] Among the peculiar phenomena of ALONSO1 we also mention the presence of flutters out of control: The rate of vibration of the vocal folds starts, in some cases, with an irregularity.

[27] We refer to the general approach to reading at a pragmatic level, as an intention of communication, perceptually defined.

[28] As mentioned before, comparison with other sound sources (of a previous period) help us to know more about a considered style. A comparative VIP/VSP-Radar among both sources of Alonso's "*Los contadores de estrellas*" would

be interesting to check many parameters, as voice setting changes as well. In fact, the stylistic coherency of the data leads us to believe that this specific poem's reading can be considered a consolidated performance in the poet's repertoire.

[29] The historical evolution of poetic speech is comparable to that of radio speech, which has been considered from various aspects (see Pettorino & Giannini, 1994; Giannini & Pettorino, 1998).

[30] Conde's professional experience in radio writing and conduction may be a possible element influencing her novel reading style at that time (see experimental voices in the second radio-television by Colonna 2022*a*).

of a marked declamation as in the previous cases. Additionally, correspondence with speech rate would appear to contribute to this grouping, which is, on average, higher with Conde and Cernuda than with the other authors.

When examining these grouping results, it would be useful to include some further additional information about the authors for a reflection. Indeed, it is interesting to note that the author whose date of birth is the earliest (Salinas) presents convergences bringing him closer to an author born 20 years later (Conde). This indicates that the development of a history of reading lends itself to many grouping criteria that are not chronological but, rather, are oriented by a global stylistic description, which can sometimes bring voices far apart in time closer together.[31]

Moving on to discuss the intonational aspect, let us surmise that the use of intonation in poetic speech – with its peculiarity and richness, which, for the most part, is not yet considered in depth and compared with other forms of speech – still requires specific further study today. On one side, it should be mentioned that many definitions of poetic intonation converge towards a definition of monotony, which is accompanied by additional terms with different nuances (cf. "monotonous incantation" in MacArthur, 2016 and MacArthur et al. 2018; "neutral" in Grobe, 2016 and Levertov, 1981; and "inexpressive" in Puff, 2015)[32]. On the other side, since

theoretical and experimental studies on poetry reading are based predominantly on mediatised speech, given by recordings made in different contexts, a comparison must also be made with what happens in radio. As De-la-Mota and Rodero Antón (2011) explain, echoing Brazil (1978), Tench (1990), Taylor (1993), and Nihalani and Po Lin (1998), a tendency of radio news broadcasters' intonation exists and is recognised for acoustically producing the sensation of a cantilena, with unexpected emphasis placed even when it is not pragmatically justified (cf. Price, 2006).[33]

On one side, the work on Italian poetry reading by Colonna (2017), then Colonna and Romano (2020) and Colonna (2021, 2022*a*), indicates that the intonation topic is articulated, and does not use the word "monotony" or "inexpressiveness", not only to avoid an evaluative or subjective terminology and favour a more descriptive or objective vocabulary but also to consider and enhance the variety that emerged among the analysed data. In fact, from these starting works, an intonational variety has been detected that does not allow for a common, simplistic reading mode, especially a "flat" type. For this reason, in this paper, we continue adopting this theory and examine the variation of intonation, about which the presented data seem to confirm this aspect. Further and specific attention would be required for future detailed studies on the theme[34].

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[31] Moreover, the migratory experience may be a further line of interest, shared by Salinas, Cernuda, and Alberti (including Conde's international experience). All of their recordings date back to their period of exile. In this case, the results of Salinas and Cernuda are divergent from Alberti, placing them at a radically opposite position about the previous considered parameters of voice setting changes and speech rate, together with the elocution style (but also comparing these with other values, e.g., synoymia and palilogia, verse curves, and plenus). Nonetheless, it appears to be an interesting result to be further explored with broader comparisons, starting from the most important chronological comparison among recordings by different periods of an author (before and after emigration), to track any possible change in the reading style, and supplementing it with further levels of observation (e.g., the diatopic dimension). Furthermore, an additional sociological perspective,

through interdisciplinary approaches, would constitute an important contribution to our line of research.

[32] This aspect, along with rhythm, has often been considered a topical element in the definition of poets as "bad readers" (Gasparini, 2009) and connected with an inherent monotony of the verse, leading to a sing-songy and monotonous rhythm in reading (Cohen, 1972; Lotman, 1978; Beccaria, 1975; Hurley, 2004; Bertoni, 2006; Sessa, 2018).

[33] This results in a tendency to unduly mark all phonic group endings as ascending or with a characteristic pattern (e.g., ascending–ascending–ascending–ascending; see Garrido, 1994, p. 188).

[34] A further interesting perspective involves the potential comparison of readings by poets, radio speakers, and actors, considering additional variations among speaker typologies. See Colonna (2019).

On the other side, the comparison poetic-radio speech has been developed in previous studies by Barney (1999), and partial analogies have been traced.[35] Referring to that work, in this paper we can say that some aspect of our study seems to confirm these descriptions, as an unforeseen use and greater quantity of pauses (see also Byers, 1979). The end of the written verse, which often naturally presents a "forced" pause, breaking a syntactical connection (e.g., enjambment), is one of the crucial places for unpredictable prosodic features (see Colonna, 2017), together with the greater or lesser emphasis given to some elements rather than others.

In this research we do not conduct a specific intonation study, but we introduce it, particularly focusing on the declarative intonation (cf. Colonna, 2022*a*). In particular, we trace back this definition and its subsequent applications to the crucial theoretical works by Delattre, considering Romano (2014–2018) as the primary reference for this methodology. Furthermore, the main references for this field, applied to the Spanish language through typologies for intonation units, are Face (2008), Hualde & Prieto (2015). Experimental studies on declarative sentences in Spanish revealed that common patterns could be detected. In particular, the studies by Pamies et al. (2007) and Pamies et al. (2011) on the unemphasised declarative intonation in Andalusian Spanish demonstrated how the tonal peaks have a demarcative function in the melodic elevation of the pre-toneme marking a syntactic or word frontier. We do not refer to the specific individual cases of word type, oxytone, paroxytone, et cetera. In the specific case of the analysis of the poetic speech intonation, deepening would be necessary. In this work, the following criticism is detected: We do not have a common reference text corpus, with equal

accentual conditions; the considered text presents syntactical complexities with rare cases of SVO (Subject-Verb-Object) structure; and this speech type is, for the most part, emphasised and presents prosodic anomalies compared to spontaneous speech. For all of these reasons, a detailed intonational analysis would be functional and would require further targeted investigation, as already stated in Colonna (2022*a*).

Considering the declarative intonation in the peculiar contexts of this speech, we often find it within a tonological bipartition, usually augmented by a pause, marking syntactical boundaries. We find it as a juxtaposition of a continuative intonation and a declarative one (e.g., we find it in "*No saber más de mí mismo / es algo triste*," by Luis Cernuda).

Indeed, the continuative plus declarative scheme, also considered to be a combination of different sentences, appears as a frequent pattern that tends to be repeated in a synonymia as found also in Colonna (2022*a*) and Romano (2020) for the Italian framework. Furthermore, declarative intonation is also found as an individual intonation that is repeated (e.g., de Champourcín) and can also present inner variations (e.g., declarative-appendix intonation). For an example of this, see Aleixandre, which also tends to vary in the global style, such as the more varied second half in ALEIXANDRE2.

In addition to the traditional assertive declarative intonations mentioned above, we also found the use of the typical poetic declaratives, defined in Colonna (2022*a*), presenting their characteristic -mb final contour.[36] This feature is particularly evident in Conde, who uses this intonation as the main one, particularly in CONDE1 and CONDE2, together with

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[35] Already in 1999 Barney made a comparison between poetic and radio news speech, identifying a style of performance and the most characteristic features of poetic intonation, thus hypothesising a theory of stereotype reading with descending intonations. Poetry divergent elements in Barney's study were speech rate, length of the prosodic unit, melodic coherence, and pauses. Considering Colonna's work (2022*a*) and the data that emerged in this study, we could say that similarities are also partially

identified in some Italian data (e.g., Amelia Rosselli marks grammatical words in a characteristic style that, in part, seems not so distant from the radio speech mentioned by De-la-Mota & Rodero Antón, 2011).

[36] Their combination reveals criticalities in detecting utterances. In fact, these poetic declaratives could be also compared to continuative, composing a poetic utterance. Nevertheless, for our perceptual analysis they correspond to individual utterances.

an enumeration type. However, this sample reveals a peculiar feature, differing from the Italian values by Colonna (2022*a*): In fact, this final -mb part is usually found connected to a contrasting high tone level of the first part. This result deserves to be considered in relation to the data by Pamies et al. cited above, although the diatopic data of Conde are different. We can suppose that this behaviour appears as a combination of a Spanish "standard" declarative together with a "poetic" pragmatic intent, confirmed by the final boundary. In Figures 7 and 8 we provide two poetic declaratives in Conde (the beginning by Conde1), which are also in a synonymia relationship.[37] Looking more broadly at all of the data, we detect a variety of intonations, which contrasts with this homogeneous feature and draws a rich overview. We find it in Alonso and Alberti, who also reach the highest voice setting changes: In these two voices, for example, we find a dense use of exclamations, combined, especially in Alberti3, with an invective "tone" and a use of strategic silences for this goal.
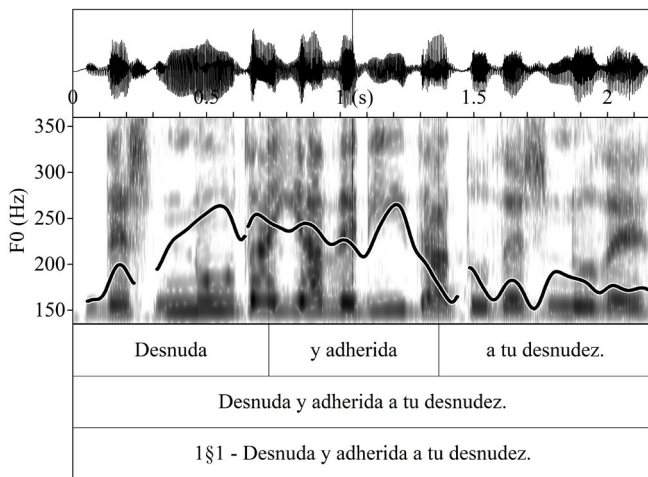
Figure 7. Example of poetic declarative in Conde: "*Desnuda y adherida a tu desnudez*" ["Naked and clinging to your nakedness"].
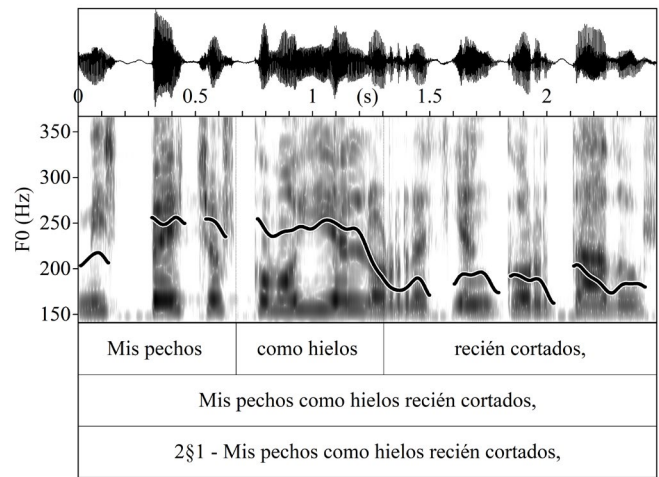
Figure 8. Example of poetic declarative in Conde: "*Mis pechos como hielos recién cortados*" ["My breasts like freshly cut ice"]
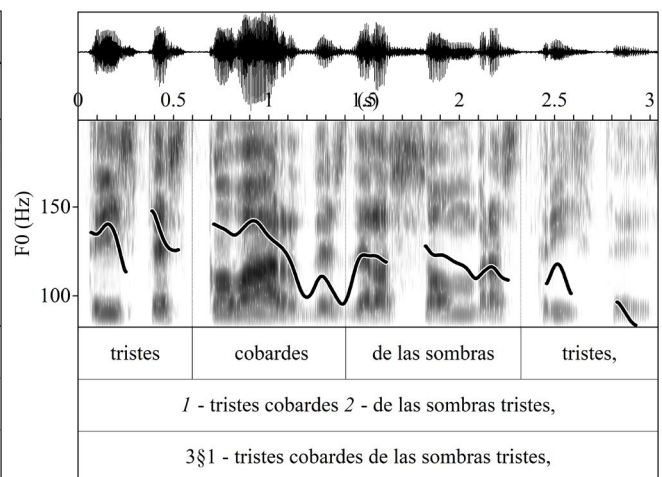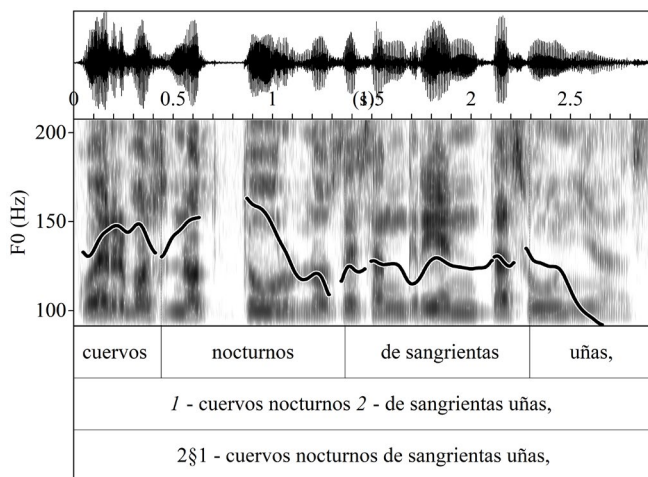
Figure 9. Example of synonymia by Alberti3, comparing two intonation curves: "*cuervos nocturnos de sangrientas uñas*" ["bloody-nailed night crows"] and "*tristes cobardes de las sombras tristes*" ["sad cowards of the sad shadows sad cowards"].

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[37] Images obtained thanks to a script by Elvira-García (2017).

The numerous intonation convergences within the same readings also emerge in the index of synonymia and palilogia (see Figure 3), confirming the strong tendency to take up similar and same intonations, as in a "formulaic" prosodic style of poetry, using repeated and varied patterns. Even some cases of major convergences are detected, and all authors resort to this strategy. The highest mean levels of this parameter are reached by Alberti and Salinas. Specifically, the highest peaks are reached in ALBERTI3, ALEIXANDRE1, SALINAS2, and ALBERTI2. Furthermore, cases of more palilogies than synonymias are present in Conde. In the following pictures (Figure 9, combining two pictures of intonation curves) we provide an example of synonymia in Alberti, with his peculiar style of reading and an emphasised and invective bi-partite CP (with the major prominence on the second rhythmical word in both cases, in an exclamation approach).[38]

Appoggiato and *articolato* measure the accentual levels based on annotations. The VIP/VSP-Radars indicate an overall prevalence of *articolato* over *appoggiato*. The prevalence of *articolato* indicates a scansion given by the CPs marking the ENs using pauses: The highest peaks are reached by Aleixandre (ALEIXANDRE2 and ALEIXANDRE3) and CERNUDA3.

Although a coherent behaviour prevails in general among the three readings of each author, a variation within the same author is also detectable, which can be linked to the textual variation. Take the case of Aleixandre, where the first text, in stanzas, with fixed metrics contrasts with the other two texts, with a particularly long verse, a single stanza and free metrics. This creates different prosodic structures and, consequently, influences the accentual features; although *articolato* is higher in all three recordings, the level in ALEIXANDRE1 is twice that of the others.

Despite the prevailing *articolato*, readings with more *appoggiato* are identified: They are those by de Champourcín followed by Alberti and Conde. These indicate that the CPs are marked by PRs, which are in high numbers; the rhythmic cores they represent within the CPs mark the reading in a perceptible way. In fact, they detach for tonal jumps (as in Alberti) or insist on a melodic level balanced with tone jumps (as in de Champourcín).

High levels of *appoggiato* are also connected to a limited use of pauses. For this reason, we can say that the high levels of *appoggiato* are found alongside high levels of plenus. The highest peaks are reached only in de Champourcín, Alberti, and Conde (see also ALONSO3, whose CPs' measure follows the wide length of the free metrics verse and of the composition, which is longer than the other two by the same author and leaves less space for silence).[39] Conversely, the lowest peak is reached with Cernuda, followed by Aleixandre and Salinas.

The variation we detect at different levels is also linked to the textual typology, which is always the starting point of these recordings. However, as we stated previously, we are unsure whether they were reading or reciting from memory. Metrics (free or fixed), layout (with or without stanzas), and types of verse (short or long) are elements that can influence prosodic variation and can find confirmation in the various values among readings of different types of texts by the same author (e.g., the contrasts in Alonso and de Champourcín).

As we approach the end of these analyses, we propose in the histogram below (Figure 10) a picture describing the relationship between the average duration of CP in comparison to that of P for each recording. This histogram indicates the highest CPs duration reached with all her readings by de Champourcín (in the overall average, the total of her CPs duration is 81% compared to 19% of the Ps) and the lowest level by ALEIXANDRE1 (with whom pauses

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[38] In these images we remove the EN level, due to the larger extension of it, useful at a greater view of analysis.

[39] In contrast, DECHAMPOURCIN1, with a structure in couplets and a subtler verse than Alonso's (septenary), reaches the

highest plenus of all 21 readings, revealing a prevalence of speech over total pausal duration.

reach a duration of 29% of the readings, compared to the CPs duration of 71%). By contrast, focusing on the pauses, the highest average duration, contrasting with the CPs' total time, is found in Cernuda (31% Ps vs. 69% CPs).

description of the radars, we turn our attention to the plan index. The maximum value is reached with de Champourcín and Aleixandre and the minimum with Cernuda. It is interesting to note how Cernuda and Alberti, whose texts are with a metrical grid, organise the poetic utterance with a measure quite different from that of the verse, unlike, for example, ALEIXANDRE1 (whose reference text is likewise in the metrical grid). This is also dictated by the internal syntax of the poems, with, in some cases, infrequent strong punctuation marks at the end of the verse and punctuation within the stanzas.[40] Another peak is reached in SALINAS1, where we may say that the enunciative realisation is a stylistic choice rather than a choice dictated by punctuation.

We conclude this analysis by addressing the enjambment phenomenon. The radars demonstrate interesting levels mainly in Aleixandre, Alonso, and Conde.[41] With Alonso, we find a significant

convergence: All three readings realise all enjambments with pause, while in the other cases we are faced with an internal variation in behaviour. The use of pause to mark a fracture is not predominantly constant within the readings, and, above all, it is not constant within the reader, when compared with other interpretations. In fact, we find isolated cases of total reproduction of enjambment with pauses in a reading (CONDE3, ALEIXANDRE1). By contrast, it is possible to find coherent syntactical choice, without pause, as a predominant choice in other cases (i.e., CERNUDA2, ALBERTI3).

These results partly overturn those of prosodic organisation indices, demonstrating how even a predominantly metrical reading (such as Alberti's) may nevertheless resort to mixed or syntactic realisations of the enjambment, confirming a prevailing variation in behaviour not only between authors but also of the authors themselves seen in various readings.

This VIP/VSP-Radar analysis allows us to identify much information revealing the complexity of this type of reading and of an individual and "common" poetry reading style, outlining a framework of greater or lesser convergence.
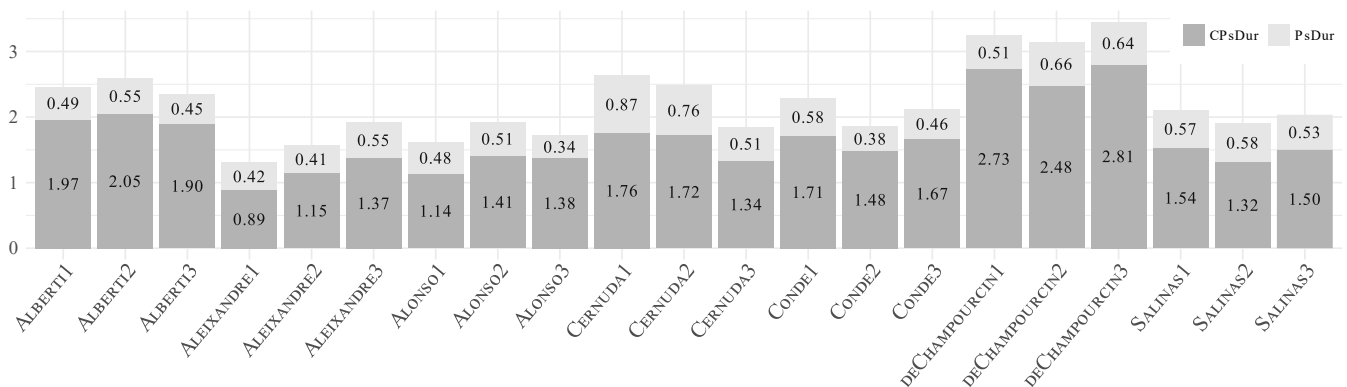

Figure 10. CP-P.

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[40] It should also be added that in Cernuda, for example, the capital letter at the beginning of the verse is only a graphic expedient but does not affect the production of the verse as an utterance.

[41] With Conde, the two poems that have enjambments within them always present the reproduction by a pause, while a text is without enjambment to measure it.

## 3. A statistical analysis of the variables of the Radar[42]

In attempting a quantitative approach to the study of the data collected so far, it may be interesting to perform clustering on the syntheses made through the VIP/VSP-Radar methodology.

Before starting, we remove from the data (the 20 VIP/VSP-Radar indices) the variable "Interrupt": being it constant, it is not useful in a statistical point of view. Since we do not have a priori knowledge of the clusters we want to obtain (other than the trivial ones, given by the readings of the same author), the most reasonable choice is to use a hierarchical clustering method, i.e., a clustering in which at each step a pair of clusters is merged, until only one remains.

We measured the distances between observations using the Euclidean norm, and we assessed the distances between clusters using the *average* linkage (their properties and some alternatives are described in Tan et al., 2018).[43] In order to choose the correct amount of clusters to be retrieved, we use the Calinski index. Widely adopted in the literature, this index attains higher values when clusters are well-separated. An effective and natural clustering is characterized by the proximity of observations within the same cluster (referred to as *density*) and substantial distance between each group and others (known as *separation* among clusters).[44]

As one can see from Figure 11, the maximum is achieved when there are three clusters. Then, we can represent the clustering with a dendrogram, in which the actual choice of clusters is obtained as a cut at the appropriate height (here, approximately 1.05). Intuitively, given a height, we can imagine drawing a horizontal line and grouping in the same cluster all observations attributable to the same branch at the height of the cut. A cluster dendrogram is provided in Figure 12.
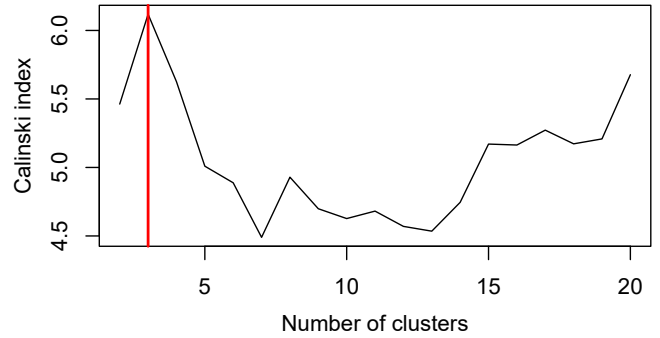
Figure 11. Plot of Calinski index for *K* clusters, with *K* = 2, …, 20. The clusters are obtained from the hierarchical clustering described above.

The three clusters seem to be balanced; an intuitive proof of the consistency of this method is provided by the fact that readings from the same author are usually enclosed within the same group. This is particularly noticeable for Alberti, de Champourcín, and Salinas and confirms what we have seen above.

At the same time, the fact that some authors (e.g., Cernuda) have their observations distributed among multiple clusters may be an indication that the radar can also effectively capture variations in the style of the same poet.

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[42] All analyses in this section were carried out using R software (v. 4.3.1). In particular, functions from the base package and from the packages *psych* and *dplyr* were used.

[43] Let C_1 and C_2 be two clusters and let $|C_1|$ and $|C_2|$ be their cardinalities. Then in the "average" linkage their distance is $\text{dist}(C_1, C_2) = \frac{1}{|C_1| \cdot |C_2|} \sum_{x_1 \in C_1} \sum_{x_2 \in C_2} dist(x_1, x_2)$.

[44] Assume there are K clusters. Let c_j be the centroid of the *j*-th cluster, i.e. the mean of its elements, n_j be the cardinality of the *j*-th cluster and c be the mean of the dataset. Then defining the *within-sum-of-squares* $WSS = \sum_{j=1}^{K} \sum_{x \in C_j} dist(x, c_j)^2$ and the *between-sum-of-squares*

$BSS = \sum_{j=1}^{K} n_j dist(c_j, c)^2$, the Calinski index (also known as Calinski-Harabasz index in the literature) is given by the formula $\frac{BSS/(K-1)}{WSS/(n-K)}$, where *n* is the amount of observations in the dataset. Note that for high values of *BSS* centroids (and consequently clusters) are spaced far apart, while for low values of *WSS* all observations in the same cluster are close to the centroid, and consequently are close to each other. For this reason, we consider the index as a function of *K*, and see for which value it is maximized.
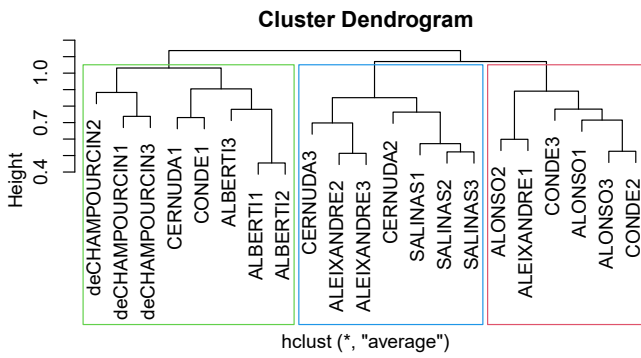
Figure 12. Cluster dendrogram. Each cluster can be seen as the set of descendants of a given branch.

To provide a graphical representation of the clusters (Figure 13), we can use some dimensionality reduction techniques. Indeed, let us recall that, being the radar given by 20 variables, the observations lie in a large dimensional space. We perform here principal component analysis (PCA), which can be thought of as a rotation of the data aimed at maximising variances: In this way, a small number of variables (each a linear combination of those of the VIP/VSP-Radar) will be able to contain almost all of the variance explained by the data and can be used to make scatterplots. For the mathematical details of this concept, we recommend Johnson and Wichern (2002).

Let us now present the first three principal components, which contain almost 95% of the variance of the data set. The separation among clusters is especially visible in the third panel (PC2 vs. PC3); conversely, one must recall that this representation may omit relevant relationships since it neglects part of the variance. For example, from the second panel (PC1 vs. PC3) we can see that although they do not belong to the same cluster, the ALEIXANDRE1, ALEIXANDRE2, and ALEIXANDRE3 readings are very close to each other: This means that the classification into different clusters can be attributed to variables other than the most relevant ones in PC1 and PC3.

Simultaneously, it is interesting to note that observations such as DECHAMPOURCIN3 and CONDE3, already reported as examples of within-author variation, stand out as extreme values in PC1.

At this point, to highlight the most important variables of the radar in this process, we show the *loadings* (see Table 5). They are just weights quantifying the contribution of each variable of the radar in defining the principal components.
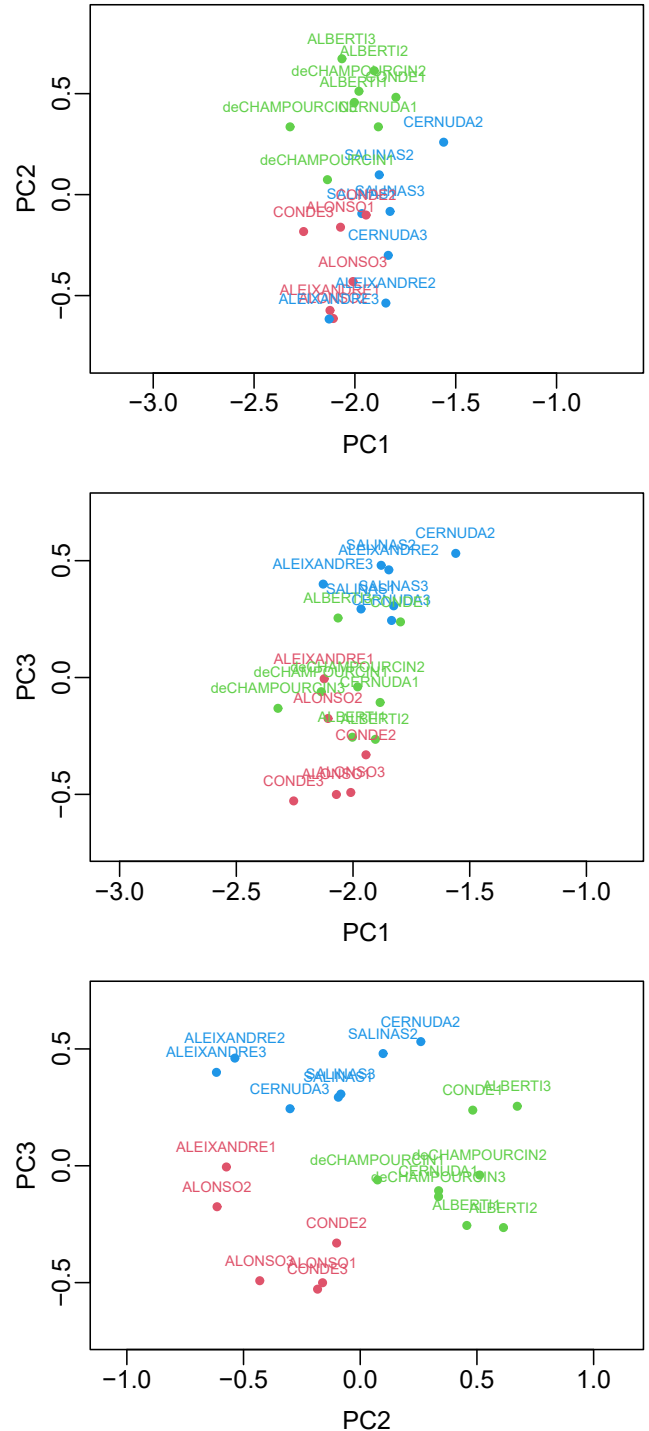
Figure 13. Three representations of the data set in a reduced space: In particular, the spaces are provided by all possible combinations of the first three principal components. Note that observations are colour-coded according to the cluster to which they belong.

	PC1	PC2	PC3
vs(CP)	-0.2097	0.4339	-0.4295
CP(vs)	-0.2346	-0.5333	0.2892
CP(vs)CP	-0.0346	0.0136	0.1927
vs(CP)vs	-0.0262	0.1104	0.0249
SpRate	-0.2313	0.0183	0.1032
Rel_meanI	-0.3288	0.0095	0.1216
Rel_meanPitch	-0.1262	0.0247	-0.061
Pitchspan	-0.3884	-0.0492	-0.0637
Voice Setting Changes	-0.2028	0.1402	0.0522
Articolato	-0.262	-0.3414	0.1913
Appoggiato	-0.2041	0.16	0.0015
Synonymia & Palilogia	-0.2675	0.1955	0.284
/Da//	-0.2612	0.1182	0.1564
Focus	-0.0271	0.0254	-0.0139
Trattenuto	-0.0975	0.0946	0.0595
Accelerando	-0.1251	0.1244	0.0243
Enj	-0.257	-0.4757	-0.6976
Plenus	-0.3396	0.212	-0.1358
Plan	-0.2687	0.0348	0.084

Table 5. Loadings for the first three principal components. Values have been rounded up to the 4th decimal number.

We can see that PC1 is influenced by the uniform contribution of several variables, while PC3 is primarily shaped by vs(CP) and, notably, by Enj.

Here it is interesting to note that low values are associated with Pitchspan, indicating that this index is not decisive in separating the observations. However, the scatterplots (Figure 13) suggest that differences between readings by the same author involve all variables, denoting a complementarity between the qualitative and quantitative approaches.

Since *loadings* represent how the variance is distributed among the principal components, we now reveal the correlation matrix (Figure 14).
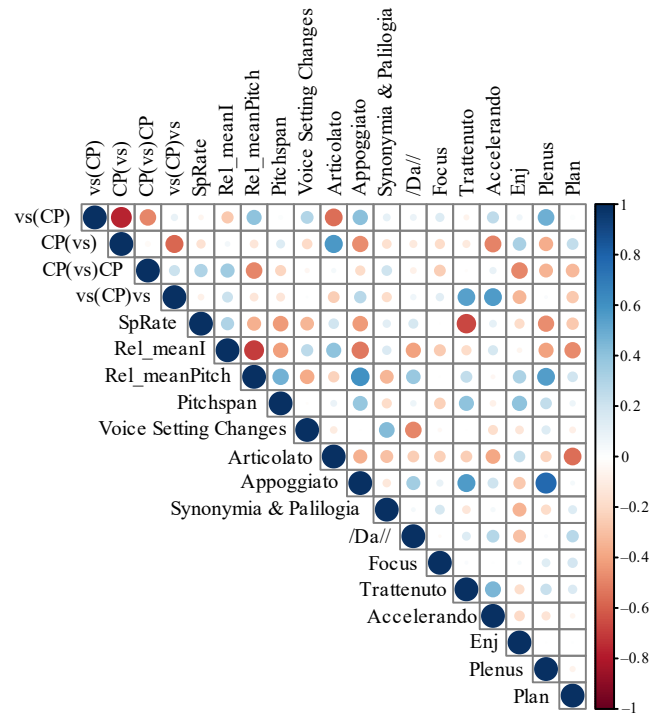
Figure 14. Correlation matrix for the radar.

The matrix indicates that the variables with higher loadings do not share a significant correlation with each other. However, it must be acknowledged that those described here are only linear relationships; the search for other relationships is complicated by the large number of variables involved.

However, observing the near-perfect correlations between radar variables leads us to wonder whether some of these may be generated by the same latent (unobserved) variables, and factor analysis is used to test this. Since the variables are non-Gaussian (a simple plot is enough to indicate this; some are even bimodal), the reference method is based on principal components. For technical aspects, we refer again to Johnson and Wichern (2002). Briefly, we assume that the original variables are expressed as linear combinations of the *factors* (plus some random error), and, using linear algebra, we attempt to retrieve such factors. In Figure 15 a representation of the indices in two-dimensional space is provided.
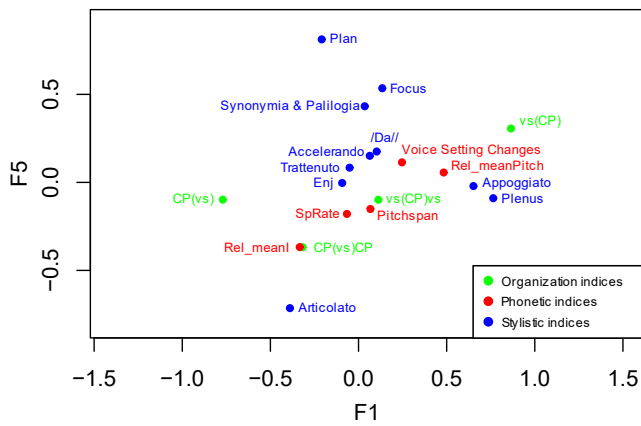
Figure 15. Representation of the indices in the two-dimensional space given by the first and fifth factors, the ones with the largest variance.

However, two difficulties arise here: the first is that to account for 80% of the variance, it is necessary to assume the existence of at least six factors, which makes their identification difficult. The second is that because of this, the scatterplots, which are again the result of a projection onto a two-dimensional space, do not highlight clear groupings among the observed variables.

At the same time, this unexciting outcome reveals that the radar methodology succeeds in extracting the relevant information from the reading of a passage without major redundancies. In other words, only the totality of the variables succeeds in capturing all of the available information and providing a wide overview.

Finally, it should be noted that the positions of Pitchspan and *trattenuto* in the graph, which have been explained to be crucial in highlighting differences between readings by the same author, are superimposed on many other variables. This means that the differentiation they introduce, from a statistical point of view, can also be described by other variables, and it explains why the principal components have not particularly emphasised their roles. Additionally, we can understand why principal components have been assigned greater importance to organisation indices: some areas of the two-dimensional space represented are, in fact, covered only by them.

In conclusion, the use of clustering techniques made it possible to verify that the data processed and catalogued by radar lend themselves well to the identification of groups among observations and that, in turn, these groups are matched by perceived differences in readings. Moreover, by reducing the size of the data, it has been possible to study the contribution each variable makes in creating the groups as well as to investigate what connections such variables have with each other.

4. Conclusions

This research shed light on various aspects of poetry reading within this group of authors. The data of the phonetic analysis that emerged allowed us to identify common traits and divergent aspects, which led us to question the possible further types of grouping that could be identified to leave an initial trace and to lay the foundations for a history of the reading of Spanish poetry.

Starting with the criticality of this consideration, more specifically, we summarise the main findings of the phonetic study:

I) A high variation among authors and within a single author (e.g., voice setting changes, number of syllables per CP, mean duration of CPs, speech rate). This led us to propose further levels of grouping, which would enable an outline of a diachronic cultural-historical evolution (e.g., a declamation vs. a more natural reading, cf. Colonna, 2022*a*). The rich framework confirms the hypothesis that a history of poetry reading may resort not to chronological but rather to phonetically oriented grouping criteria.

II) The presence of common features on an organisational level (even if variation is not absent, the prevalent choice of adopting verse curves and curves is common) and on a phonetic level (e.g., with common intonation patterns and the prevailing use of *articolato*). This suggested a global grouping.

In conclusion, it is necessary to emphasise that the research conducted from a qualitative point of view

was able to explore the presence of common patterns and possible peculiarities in the readings of the same author and provided a characterisation for a division of the observations into groups based on reading style. Conversely, the quantitative approach confirmed the presence of groups and subgroups and provided insights into other possible categorisations.

The statistical analysis, aimed at testing the validity of the VIP-Radar phonetic study model, confirmed its effectiveness, as the outlined groups and clusters based on currently available data showed. While the current sample size is large enough to lend interest to this approach, we are aware that the inclusion of new observations may bring improvements, and we plan to add them in the future and report any noteworthy findings.

The differences found can be attributed to the significant dimensionality of the data collected, which makes the same phenomenon lend itself to being described in terms of different interactions between variables. A goal that can be set for subsequent analyses is to identify a radar-specific metric and linkage that can best fulfil the tasks specified above; in addition, it will be possible to use other data with the aim of integrating what has been seen so far.

As for suggestions for future phonetic studies, we mention broadening the study to include more data and lasting until the most recent time, including many readings of the same poem and a focus on intonation, to continue the tracking and description of Spanish poetry reading; deepening the comparative investigation of the migratory and international experience of selected authors, investigating, on an interdisciplinary level, possible influences in the evolution of poetic reading; and comparing poetic speech with other forms of speech and at a diatopic level.

This study on the voices of some of the most representative poets of the Generation of '27 establishes a first framework of the last century's poetry reading in Spain, which provides a starting point and poses several questions that can be explored in future studies.

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