

The Phonological Changes in Informal Panamanian Spanish: A Distinctive Feature Analysis

Los Cambios Fonológicos en el Español Informal Panameño: Un Análisis de Rasgos Distintivos

As mudanças fonológicas no espanhol informal do Panamá: Uma análise de características distintivas

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Abstract

Context: This article addresses the phonological changes in informal Panamanian Spanish, analyzing the distinctive features and underlying forms of phonological variations. The main **objective** is to examine the articulation patterns of native speakers and how these reflect linguistic evolution in Panama. The **methodology** includes a purposive sampling strategy, individual interviews, and the use of a standardized word list for data collection. Through distinctive feature analysis, prevalent phonological processes such as elision, assimilation, and prothesis were identified. The **results** highlight the elimination of sounds and their adaptation in informal speech,

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emphasizing the richness and diversity of Panamanian Spanish. The most relevant **conclusion** is that these phonological variations not only reflect the influence of other languages and cultures but also the cultural and social identity of the speakers. This study contributes to the preservation of linguistic diversity and provides a deeper understanding of phonological changes in Panamanian Spanish.

Palabras clave: Phonological Patterns, Distinctive Features, Phonological Processes, Spanish Phonology, Panamanian Spanish Phonology.

Resumen

Contexto: Este artículo aborda los cambios fonológicos en el español informal panameño, analizando los rasgos distintivos y las formas subyacentes de las variaciones fonológicas. El **objetivo** principal es examinar los patrones de articulación de los hablantes nativos y cómo estos reflejan la evolución lingüística en Panamá. La **metodología** empleada incluye una estrategia de muestreo intencional, entrevistas individuales y la utilización de una lista estandarizada de palabras para la recolección de datos. **Resultados:** Mediante el análisis de rasgos distintivos, se identificaron procesos fonológicos prevalentes como la elisión, la asimilación y la prótesis. Los resultados destacan la eliminación de sonidos y la adaptación de los mismos en el habla informal, subrayando la riqueza y diversidad del español panameño. La **conclusión** más relevante es que estas variaciones fonológicas no solo reflejan la influencia de otras lenguas y culturas, sino también la identidad cultural y social de los hablantes. Este estudio contribuye a la preservación de la diversidad lingüística y proporciona una comprensión más profunda de los cambios fonológicos en el español panameño.

Keywords: Patrones fonológicos, Rasgos distintivos, Procesos fonológicos, Fonología del español, Fonología del español panameño.

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Resumo

Contexto: Este artigo aborda as mudanças fonológicas no espanhol informal panamenho, analisando as características distintivas e as formas subjacentes das variações fonológicas. O **objetivo** principal é examinar os padrões de articulação dos falantes nativos e como esses refletem a evolução linguística no Panamá. A **metodologia** inclui uma estratégia de amostragem intencional, entrevistas individuais e o uso de uma lista padronizada de palavras para a coleta de dados. Através da análise de características distintivas, foram identificados processos fonológicos prevalentes, como elisão, assimilação e prótese. Os **resultados** destacam a eliminação de sons e sua adaptação na fala informal, enfatizando a riqueza e a diversidade do espanhol panamenho. A **conclusão** mais relevante é que essas variações fonológicas não refletem apenas a influência de outras línguas e culturas, mas também a identidade cultural e social dos falantes. Este estudo contribui para a preservação da diversidade linguística e proporciona uma compreensão mais profunda das mudanças fonológicas no espanhol panamenho.

Palavras-chave: Padrões fonológicos, características distintivas, processos fonológicos, fonologia espanhola, fonologia do espanhol panamenho.

Introduction

The Spanish language, also referred to as Castilian, is a Romance language that originated in the Iberian Peninsula and is now spoken as a first language by around 460 million people worldwide, making it the second most spoken native language in the world after Mandarin Chinese. It is the official language of Spain and most countries in Central and South America, as well as Equatorial Guinea in Africa and a minority population in the Philippines. As a result of this extensive geographical dispersal, there is a wide range of dialectal variants. There have been discrepancies about the use of Spanish and Castilian; however, the *Diccionario panhispánico de*



dudas (DPD) defines the term Spanish to refer to the language internationally that lacks ambiguity, while Castilian should be reserved for the Romance dialect or the dialect spoken in the Castile region.

Lately, the rapidity of communication media and the widespread dissemination of written language in literature and mass media has resulted in most Hispanic speakers speaking a common language that everyone understands, notwithstanding regional differences. Regarding a standard for neutral Spanish, it is worth noting that most Latin Americans rely on the Real Academia Española (RAE). The RAE's primary mission is to ensure that changes to the Spanish language, as it constantly adapts to the needs of its speakers, do not disrupt its essential unity across the Spanish-speaking world. As a result, the RAE has become a widely respected and authoritative institution regarding the regulation and standardization of the Spanish language, making it an important reference point for those looking to communicate clearly, accurately, and academically. However, due to socio-cultural factors, many Latin American countries have different linguistic factors that give each culture its own identity. We can highlight the phonological changes that make each country's accents and ways of speaking distinctive. However, this is only possible in an informal environment since, as I mentioned before, professionals and academics try to maintain a neutral Spanish. Therefore, a significant number of phonological variations still prevail in the daily/informal speech of each country's society.

Panama is a Central American country that has Spanish as its official language. The dialectal Spanish of Panama, often considered Panamanian Spanish, is the set of modalities of the Spanish language spoken in Panama that correspond to a local variant of Caribbean Spanish. Due to the cultural influence and presence of the United States, Panamanian Spanish has absorbed much vocabulary from English and the 19th-century immigration of citizens from English-speaking Caribbean territories (Jamaica, Trinidad, Tobago, Barbados, etc.). This influence has contributed to the provinces of Bocas del Toro and Colón. In addition, French has

had a slight impact on Panamanian Spanish. The Hebrew, Arab, Italian, Hindu, Chinese, and Greek colonies have influenced Spanish to a lesser degree, as have the aboriginal ethnic groups of Panama. Even though the linguistical base of Panamanian Spanish is Castilian, many languages have contributed to its enrichment through loanwords and accents. Some Amerindian languages, others African, English, French, Italian, and German, have left their mark on Panamanian Spanish to a greater or lesser extent.

Thus, due to the influence of other languages and cultures, Spanish in Panama has been exposed to changes throughout the years. Each district and province has different intonations, idioms, pitch, etc. For example, a Panamanian who comes from and has been raised in the capital of the country speaks differently than one from a neighboring province, for example, Colon, whose region is influenced by his African ancestors. In other words, each country's region has phonological changes compared to those that use standard Spanish.

Many people have expressed concerns about how the Spanish language will take over time inside the Panamanian population. There is also debate about the best or most accurate way to speak when referring to academic standards, and there is disagreement about whether all regional variations of Spanish are accepted. However, few researchers have focused on a detailed analysis of the phonological variations that Panamanians express daily, and there are very few studies on the subject.

This study explores the variations in the phonological aspects of Spanish spoken in the Aguadulce District of Panama. Furthermore, this study aims to conduct descriptive research of the data collected to determine the general phonological processes among the Panamanians and a close analysis of the distinctive features of sounds that are part of the phonology of the diverse regions of Panama. The study employs Distinctive Feature Analysis as the method to achieve this objective. By analyzing distinctive phonetic features, the research aims to identify the unique characteristics of Spanish spoken in the region and how linguistic features evolve across specific

geographic areas. Additionally, understanding how language evolves in this specific region provides insights into the sociolinguistic dynamics shaping the local community.

By identifying the unique characteristics of Spanish spoken in the region, this study aims to contribute to the preservation of linguistic diversity and shed light on the cultural context. The research collected qualitative data from individual interviews and focused on the changing sounds through elision and assimilation processes.

Clark & Yallop (1990, p. 90) stated that elision refers to a special case in which specific segments or syllables are lost or omitted. If the articulation of a sound in everyday speech is weakened too much, the sound may disappear in running speech. The omission of sounds in colloquial speech is common to all languages and is based on the famous and universal 'Law of Least Effort.' When speakers of any language do not feel the need to speak carefully and pronounce all sounds, we tend to make as little effort as possible to communicate. "The principle of least effort is an adequate explanation for many isolated changes, such as the reduction of God be with you to good-bye, and it probably plays an important role in most systemic changes, such as the loss of inflections in English." (Millward, 1996). Curiously, the omission of sounds is stigmatized for most speakers and is associated with a low socioeconomic or sociocultural level. This social stigma makes many people think this phenomenon is vulgar or inappropriate. The elision of sounds is a phenomenon that occurs mainly in colloquial speech, although not only there, but can also appear in more formal registers.

French Maunory records the loss of sound ending in -ado. (Zamora Vicente, 1970, p. 66; Lapesa 1981 p. 389). During the XVI and XVII centuries, the loss of dental in intervocalic position became widespread in the peninsular Middle Ages and Madrid, where, in 1701, the grammatical French Maunory records the loss of sound ending in -ado. (Zamora Vicente, 1970, p.66; Lapesa 1981, p.389).

Some studies can be highlighted regarding the elision in Latin American Spanish dialects, like

Caracas (D'Introno & Sosa, 1986; Malaver & Perdomo, 2016), Puerto Cabello (Navarro, 1983 y 1995), and others. Nevertheless, Cedergren (1973, 1979) compared two phonological processes happening in the intervocalic /d/ in Panama; the process first is the weakening of /d/ turning into /ð/, and the second is the deletion of /d/. Due to the first process happening in urban areas, it influenced the rural regions and evolved as a deletion. Nevertheless, the deletion is more frequent in informal speech in rural and urban areas. Most of these papers focus more on the sociolinguistic area rather than generative phonology.

Assimilation is a phonological phenomenon that occurs within or between words in all languages. It occurs when a spoken sound adopts some feature of another nearby sound that influences it. Assimilation is a sound shift that occurs when some phonemes (usually consonants or vowels) alter to sound more like other surrounding sounds. It can be heard in regular speech but is more common with rapid speaking. Assimilation causes some spoken sounds to diverge from standard pronunciation in isolation, such as the English entry prefix in-, which is spoken with the phonetic [m] rather than [n]. In other circumstances, the alteration is acknowledged as canonical for that word or phrase, notably if it is recognized in standard spelling: implant, historically constituted of in + planta.

McCarthy et al. (2003, pp. 320 – 322) stated in partial assimilation, the targeted segment takes on some, but not all, of the characteristics of the source segment. [...] Assimilation, understood as autosegmental spreading, is the primary source of evidence for feature geometry, a model of how different phonological features pattern together. Nasal place assimilation, for example, shows that the various features for the place of articulation can act together: [labial] assimilates in /n+p/ → mp, [dorsal] assimilates in /n+k/ → ŋk [...] (McCarthy et al., 2003).

Methathesis

Although each language has its characteristics, it is vital to emphasize that Spanish speakers understand each other without difficulty. It is the same as when an American speaks with a British

or an Australian: they know each other. Only two varieties of Spanish—one of the languages with the most significant geographical dispersion in the world—are typically used: Latin American Spanish and European Spanish. Media outlets, publications, international organizations, and businesses that market their goods or services globally use this fundamental classification when the message is not directed at a specific nation. As a result, they translate or create content for these two regions. The level of standardization between Latin American Spanish and international Spanish is exceptionally high; in fact, it only needs one more variant—the Spanish variety—to qualify as "international." Recognize or list the usage of no more than 20 Hispanic countries where Spanish is the official language.

In Latin America, the name "Spanish" refers to the language brought by the Spanish invaders. In Spain, however, the term "Castilian" refers to the region of Castilla, which is regarded as the cradle of this language. Furthermore, because Catalan (or Valencian), Galician, and Basque are all Spanish, many Spaniards prefer to name it the Castilian language.

There are other regional classifications in America besides the many national variations. The countries with the highest population density are Mexico, Colombia, and Argentina. The homogenization of Latin American Spanish as a variant is reinforced by the lexical and structural options promoted as standard for all of Latin America. However, one term is used more in one country than another. Furthermore, there are many differences between European and Latin American Spanish and how it is spoken in some areas of Spain and Hispanic countries.

The most noticeable distinction across dialects is in pronunciation; however, it is not a big difference. For example, in many parts of Central America, the /s/ is silent or aspirated, and sometimes they eat the odd syllable. In Argentina and Uruguay, they pronounce the /y/ and the double // stridently—a quirk known as "sheísmo." The "lisp" phenomenon that is ubiquitous throughout the Iberian Peninsula is perhaps the most noticeable distinction between Spanish and Latin pronunciation.

The dilemma of correct and incorrect Spanish is a hot topic among Spanish speakers on the American continent; as Tinoco (2014) stated that establishing the parameters of what is "correct" or "incorrect" oral Spanish represents a great task for Spanish speakers since it will depend on the perspective that each town or individual has on their linguistic awareness. Furthermore, few researchers have tried to deeply research the Panamanian colloquial register or dialect. Firstly, we mention Rosero (2017), who stated that phonetically and phonologically, Panamanian Spanish is a Caribbean variety characterized by the reduction of syllable-final consonants and little vowel modification. There is no clear explanation or cultural influence of the unique Panamanian dialect; however, Aatlo (2021) added that Panamanians' language behavior reflects their cultural identity, with women leaning towards normative standards while men prioritize local features, emphasizing the importance of maintaining identity through language choices and underscoring a strong sense of cultural pride and value tied to linguistic preferences in Panama.

A distinctive feature is the most fundamental unit of phonological structure that may be investigated in phonological theory. The natural classes of segments that distinct features describe are divided into four categories: major class features, laryngeal features, manner features, and place features.

In their book, Halle and Clements (1983) established the features of consonant and vowel sounds that are nowadays used. Regarding consonant sounds, they classified sounds into three classes of features: major class features, place features, and manner features. On the other hand, vowel sounds only share four features, which are represented as [round], [high], [back], and [tense].

Instead of classifying segments using the categories specified in the International Phonetic Alphabet, auto-segmental formalism uses distinguishing features that allow for greater granularity and easier identification of natural classes. A component is identified by a +/- dichotomy of several binary features, some of which are partial features of unary features. For example, [p], a voiceless bilabial stop, is indicated by [-sonorant, -continuant, -voice, labial], and a set of voiced coronal

stops can be distinguished by [-sonorant, -continuant, +voice, coronal].

After Jakobson created the first theory of distinctive features in 1941, distinctive features were assumed to be binary. Chomsky and Halle formally adopted this theory about binary distinguishing features in "Sound Pattern of English" in 1968. Because these qualities were interpreted as universal, they may serve as the foundation for an increasingly complex model of phonological behavior. While Jakobson et al. (1952) concentrated on establishing the distinguishing qualities utilized for contrasting sounds, these features have now been applied to other aspects of phonological events. It was discovered, for example, that the traits used to create lexical contrasts may also be utilized to formulate phonological rules.

Methods

The primary objective of this investigation is to scrutinize phonological changes in informal Panamanian Spanish, specifically centering on the articulation patterns of native speakers. In pursuit of this objective, the following methodology was implemented:

Sampling Strategy

A purposive sampling strategy was employed to select participants for the study, ensuring a comprehensive representation of adult speakers from diverse regions of Panama. Purposive sampling is a non-probability sampling method where subjects are selected based on specific characteristics, in this case, regional linguistic differences, to explore similarities in their speeches (Palinkas et al., 2015). Five individuals, aged between 18 and 40, were chosen to provide a diverse linguistic sample.

Data Collection

The principal method of data collection involved personal communication through interviews with the selected participants. Throughout these interviews, participants were tasked with reading a predetermined set of words tailored to elicit specific phonological features. This approach

facilitated direct observation and recording of pronunciation in a controlled setting, ensuring consistency and reliability in the collected data. This method aligns with Labov's (1972) approach to sociolinguistic interviews, which emphasizes the importance of controlled elicitation for phonological analysis.

Instruments

The primary instrument for data collection was a standardized word list, meticulously curated to encompass a variety of phonological features such as diverse vowels, consonants, and syllable structures. The use of a standardized word list is a common practice in phonological studies, as it ensures that all participants are evaluated using the same linguistic criteria, thus enhancing the comparability of the data (Munro & Derwing, 1995). Participants were directed to orally articulate these words during the interviews, providing a consistent foundation for phonological analysis.

Data Analysis

The data analysis consisted of transcription and implementation using a qualitative approach, specifically distinctive feature analysis. Distinctive feature analysis is a phonological method used to identify and categorize the essential characteristics that differentiate sounds within a language (Chomsky & Halle, 1968). This method entailed scrutinizing the phonological characteristics of the spoken words, focusing on aspects such as vowel and consonant articulation, syllable stress, and intonation patterns. Through this analysis, the study aimed to discern patterns and variations in the pronunciation of informal Panamanian Spanish.

Resulted and discussion

Here, the researcher will provide several manifestations of phonological variation in the Spanish used in Panama. Panamanian Spanish native speakers provided these examples. We will observe and analyze the several phonological variations from different sectors of the country.

The first variation is the elimination of the /r/ in infinitive verbs; it is common in all provinces of the country.

According to the RAE 23rd edition, the infinitive is the non-personal form of the verb, whose ending in Spanish is *-ar*, *-er*, or *-ir*, which is assimilated to the noun in specific contexts, can form verbal periphrases and is used characteristically in substantive subordination. People with high social status, like scholars and teachers, usually try to avoid this elision.

Table 1

Elision of /r/ in Infinitive Verbs

Spanish words	Standard Spanish	Colloquial register	English equivalent
comer	[ko'mer]	[ko'me]	eat
beber	[be'ber]	[be'βe]	drink
dormir	[dor'mir]	[dor'mi]	sleep
correr	[ko'rer]	[ko're]	run
saltar	[sal'tar]	[sal'ta]	jump
morder	[mor'der]	[mor'ðe]	bite
estudiar	[estudjar]	[estu'ðja]	study
vivir	[bi'bir]	[bi'βi]	live
jugar	[xu'ɣar]	[xu'ɣa]	play
pensar	[pen'sar]	[pen'sa]	think

Source a: (A. Lucas, personal communication, November 15, 2022)

Distinctive features

Phonological rule: $/r/ \rightarrow \emptyset / [i] [a][e] _ \#$

$$/r/ \rightarrow \emptyset / \left[\begin{array}{l} + \text{syllabic} \\ - \text{back} \\ - \text{round} \end{array} \right] _ \text{final position}$$

In Spanish, infinitive verbs end with the morphemes *-ar*, *-er*, and *ir*. Panamanians often eliminate the sound /r/ to shorten words. If we observe, this elimination happens when /r/ is at the final position and in the primary stress. According to the phonological rule, we can state that /r/ is eliminated when before the back unrounded syllable sounds at the final position.

Elision of the intervocalic /d/.

Before introducing the data, it is necessary to review the suffixes in each section briefly. According to the RAE (2016, pp.1589), -ado, -da suffixes have six different functions:

- form adjectives and nouns derived from verbs of the first conjugation (*anticuado, dotado, ahorcado, aprobado*).
- form adjectives that express the presence of what is meant by the primitive (*barbado, invertebrado, sexuado*).
- express similarity (*aterciopelado, azafranado, nacarado*).
- form nouns that indicate action and effect (*afeitado, revelado*).
- designate a set (*alcantarillado, alumnado*).
- indicate dignity or position (*obispado, papado, rectorado*).

Table 2

Elision of Intervocalic /d/ in -ado Suffixes

Spanish words	Standard Spanish	Colloquial register	English equivalent
estresado	[estre'sado]	[estre'sao]	stressed
enojado	[eno'xado]	[eno'xao]	annoyed
anaranjado	[anaran'xado]	[anaran'xao]	orange
morado	[mo'rado]	[mo'rao]	purple
mojado	[mo'xado]	[mo'xao]	wet
afeitado	[afej'tado]	[afej'tao]	shaven
cansado	[kan'sado]	[kan'sao]	tired
tirado	[ti'rado]	[ti'rao]	thrown
apurado	[apu'rado]	[apu'rao]	rushed
casado	[ka'sado]	[ka'sao]	married

Source b: (H. Vega, personal communication, November 20, 2022)

Distinctive features analysis

Phonological rule: /d → Ø / [a] ___ [o]



$$/d/ \rightarrow \emptyset / \left[\begin{array}{l} + \text{syllabic} \\ - \text{high} \\ + \text{low} \\ + \text{back} \\ + \text{tense} \end{array} \right] - \left[\begin{array}{l} + \text{syllabic} \\ - \text{high} \\ - \text{low} \\ + \text{back} \\ + \text{tense} \end{array} \right]$$

Table 1 shows the elision of the phoneme /d/ since it is in the middle of two vowel sounds, /a/ and /o/. As you can observe in the distinctive feature section, [a] and [o] share the most features; the only difference is the low feature. In Spanish, when the phoneme /d/ is between vowels, it is represented by the allophone [ð]. This phonological process has been highly investigated and is not the subject of this investigation. As we know, [ð] is the interdental fricative voiced sound, similar to the [θ] sound. Panamanians and other Latin American countries tend to avoid interdental sounds, which might be one reason this phonological process exists. On the other hand, the [o] is similar to the [a] sound (sometimes they are confused) since the mouth opens and the sound produced is long [a]; on the other hand, the [o] sound is long, but the mouth is slightly opened; furthermore, the researcher states that this elimination of the /d/ creates a particular type of diphthong /ao/. In Panama and other Caribbean countries, native speakers tend to eliminate the /d/ sound to shorten the words when speaking fast; furthermore, it is easier to pronounce together without making a pause to pronounce the consonant /d/ sound in between vowels /a/ and /o/. In addition, the researcher states that even though the morpheme -ado is a suffix, this variation can also be present in rapid speech expressions in the same environment. To illustrate, the researcher provides this phrase:

- the underlying form /adondeβas/ is actually expressed [aondeβas]

According to data, it seems that these variations only appear with words with the -ado suffix. Nevertheless, other data prove that this deletion also happens with the suffix -ido.

Table 3

Elision of Intervocalic /d/ in -ido Suffixes



Spanish words	Standard Spanish	Colloquial register	English equivalent
perdido	[per'dido]	[per'dio]	lost
conocido	[kono'θido]	[kono'sio]	known
mordido	[mor'dido]	[mor'dio]	bitten
desnutrido	[deznu'trido]	[desnu'trio]	malnourished
cocido	[ko'θido]	[ko'sio]	cooked/sewed
pedido	[pe'dido]	[pe'dio]	order
divertido	[diβer'tido]	[diβer'tido]	fun
dormido	[dor'mido]	[dor'mio]	asleep
molido	[mo'lido]	[mo'lio]	ground
comido	[ko'mido]	[ko'mio]	eaten

Source c: (H. Salazar, personal conversation, November 22, 2022)

As we can observe, this variation is also present in words with -ido suffixes.

Distinctive features

Phonological rule: $/d/ \rightarrow \emptyset /$ [i] ___ [o]

$$/d/ \rightarrow \emptyset / \left[\begin{array}{l} + \text{syllabic} \\ + \text{high} \\ - \text{low} \\ + \text{back} \\ + \text{tense} \end{array} \right] \text{ --- } \left[\begin{array}{l} + \text{syllabic} \\ - \text{high} \\ - \text{low} \\ + \text{back} \\ + \text{tense} \end{array} \right]$$

As we can observe, this variation is present in words with -ido suffixes as well.

Distinctive features

Phonological rule: $/d/ \rightarrow \emptyset /$ [i] ___ [o]

$$/d/ \rightarrow \emptyset / \left[\begin{array}{l} + \text{syllabic} \\ + \text{high} \\ - \text{low} \\ + \text{back} \\ + \text{tense} \end{array} \right] \text{ --- } \left[\begin{array}{l} + \text{syllabic} \\ - \text{high} \\ - \text{low} \\ + \text{back} \\ + \text{tense} \end{array} \right]$$

The same variation as in Table 1 is shown in Table 2; the only changing factors are the syllabic sounds and [a] and [i]. In contrast with the data analysis from Table 1, the sounds [i] and [o] do not have a close relationship in terms of features as [a] and [o] do; nevertheless, the researcher believes that since /io/ is a diphthong in the Spanish language, Panamanians are better

familiarized with this diphthong sound and it is easier and faster rather than make a pause to pronounce /d/ sound. Now, if we compare [a], [i], and [o], the distinctive features that stand out are [+ syllabic] [+ back] [+ tense] [−round].

So, to improve the phonological rule, the researcher will analyze the distinctive features and phonological rule using data from Tables 2 and 3.

Distinctive features

Phonological rule: $/d/ \rightarrow \emptyset / [a], [i] \text{ ___ } [o]$

$$/d/ \rightarrow \emptyset / \left[\begin{array}{l} + \text{ syllabic} \\ + \text{ back} \\ + \text{ tense} \\ - \text{ round} \end{array} \right] \text{ ___ } \left[\begin{array}{l} + \text{ syllabic} \\ - \text{ high} \\ - \text{ low} \\ + \text{ back} \\ + \text{ tense} \end{array} \right]$$

To conclude, the researcher can argue that the /d/ sound is eliminated when it is between [+ syllabic] [+ back] [+ tense] [−round] sounds and [+ syllabic] [−high] [−low] [+ back] [+ tense] sounds.

Cluster reduction

Now, let us observe what happens with the suffix -ada. The RAE (2016, pp.1589) shows that the suffix -ada holds seven functions:

- forms nouns derived from other nouns, meaning 'set' (*fritada, vacada*).
- indicate content (*carretada, cucharada*).
- indicate period (*otoñada, temporada*).
- indicate hit (*palmada, pedrada*).
- they can indicate action, sometimes with a pejorative tone (*alcaldada, trastada, zancada*).
- they can signal abundance or excess (*panzada, riada*).

- form nouns derived from verbs of the first conjugation, which usually denote action and effect (*llamada, llegada*).

Table 4

Cluster Reduction in -ada Suffixes

Spanish words	Standard Spanish	Colloquial register	English equivalent
desesperada	[desespe'rada]	[desespe'ra]	desperate
picada	[pi'kada]	[pi'ka]	chopped
cachetada	[katʃe'tada]	[kaʃe'ta]	slapped
empollerada	[empole'rada]	[empole'ra]	adj. for women who wear Panamanian traditional costume
ensalada	[ensa'lada]	[ensa'la]	salad
enojada	[eno'xada]	[eno'xa]	annoyed
trompada	[trom'pada]	[trom'pa]	punched
nada	['nada]	['na]	nothing
estresada	[estre'sada]	[estre'sa]	stressed
tajada	[ta'xada]	[ta'xa]	slice

Source d: (N. Magallon, personal communication November 22, 2022)

Distinctive features

Phonological rule: /da/ → Ø / [a] ___ #

$$/da/ \rightarrow \emptyset / \left[\begin{array}{l} + \text{syllabic} \\ - \text{high} \\ + \text{low} \\ + \text{back} \\ - \text{round} \\ + \text{tense} \end{array} \right] \text{---} \left[\text{Final position} \right]$$

In this situation, Table 4 presents words with the suffix- *ada*; in contrast with Table 2 and Table 3, not only /d/ is eliminated, but also the /a/ sound. If we were to eliminate only the /d/, all words would have a double /aa/ at the end. However, this type of diphthong does not exist in Panama, so the speaking population eliminates one of the double /a/ sounds. To conclude, the researcher states that, in Panamanian Spanish, the /da/ sound is permanently eliminated when before the [+ syllabic] [- high] [+ low] [+ back] [- round] [+ tense] and at the final position.

Despite this phenomenon affecting the prefixes—ado,—ido, and—ada, which is considered an improper use of language or very informal speech, most Panamanians in all provinces, no matter their social and economic status, speak like this.

Assimilation

from /n/ to [m]

The word *un*; means one. According to the Collins Spanish Dictionary (2005), '*un*' is an indefinite article (in the singular, referring to something unknown or imprecisely) → to; (before a vowel or h) → an; (giving greater emphasis, with temporal expressions) → *una silla* → a chair, *un paraguas* → an umbrella.

Table 5

Assimilation of /n/ to [m] in Presence of Plosive Sounds

Spanish words	Standard Spanish	Colloquial register	English equivalent
un peso	[un 'peso]	[um 'peso]	one peso
un plato	[un 'plato]	[um 'plato]	a plate
un vaso	[un 'baso]	[um 'baso]	a cup
un bus	[un 'bus]	[um 'bus]	a bus
un bizcocho	[unbis 'kotʃo]	[umbis 'kotʃo]	a cake
un palacio	[unpa 'lasjo]	[umpa 'lasjo]	a palace
un partido	[unpar 'tido]	[umpar 'tiðo]	a match
un beso	[un 'beso]	[um 'beso]	a kiss
un baile	[un 'bajle]	[um 'bajle]	a dance
un perro	[un 'pero]	[um 'pero]	a dog

Source e: (D. Tuñón, personal conversation, November 30, 2022)

Distinctive features

Phonological rule /n/ → [m] / [u] — [p], [b]

$$/n/ \rightarrow \left[\begin{array}{l} + \text{consonantal} \\ + \text{labial} \\ - \text{coronal} \\ + \text{nasal} \end{array} \right] / \left[\begin{array}{l} + \text{syllabic} \\ + \text{high} \\ - \text{low} \\ + \text{back} \\ + \text{tense} \\ + \text{round} \end{array} \right] - \left[\begin{array}{l} + \text{consonantal} \\ - \text{sonorant} \\ + \text{labial} \\ - \text{coronal} \end{array} \right]$$

In the data from Table 5, we observe a partial contiguous regressive assimilation process. Specifically, the plosive obstruent sounds [p] and [b] influence the voiced alveolar nasal [n]. The anticipation of the features [+consonantal], [-sonorant], [+labial], and [-coronal] from the plosive obstruents leads to the assimilation of the [n], causing its [+coronal] feature to change to [-coronal]. Consequently, the [n] become [m], adopting the labial features of the preceding plosives. The researcher concludes that in Panamanian Spanish, the alveolar nasal /n/ transforms into the bilabial nasal /m/ when it occurs between the vowel [u] and a plosive obstruent sound.

Prothesis and Glide Strengthening

Insertion of /y/ and glide formation /w/

Table 6

Insertion of /y/ and Glide Formation /w/ before the Vowel /e/

Spanish words	Standard Spanish	Colloquial register	English equivalent
huevo	[ueβo]	[yweβo]	Egg
hueso	[ueso]	[yweso]	Bone
huelo	[uelo]	[ywelo]	Smell
huella	[ueja]	[yweja]	Print
huerto	[uerto]	[ywerto]	Vegetable garden
abuelo	[abuelo]	[aywelo]	Grandfather

Source f: (L, Pérez, personal conversation, December 1, 2022)

Distinctive features

Phonological rule /u/→ y w / [e]

$$/u/ \rightarrow \left[\begin{array}{l} + \text{consonantal} \\ - \text{sonorant} \\ + \text{continuant} \\ + \text{voiced} \end{array} \right] \left[\begin{array}{l} - \text{consonantal} \\ + \text{sonorant} \\ + \text{labio-velar} \\ + \text{round} \end{array} \right] \left[\begin{array}{l} + \text{syllabic} \\ + \text{sonorant} \\ + \text{dors} \\ - \text{round} \end{array} \right]$$



+velar +high -low	+ high +back - low + continuant +voiced	/	-high -anterior
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Data in Table 6 showed two phenomena in the Panamanian speech. The data provided demonstrates a consistent phonological phenomenon where the vowel [u] transforms into the sequence [ɣw] when followed by the vowel [e]. This change occurs in both word-initial positions and within words, as seen in the examples [ueβo] becoming [ɣweβo] and [abuelo] becoming [aɣwelo]. This phenomenon is known as prothesis, where an additional sound is inserted at the beginning of a word or morpheme.

To understand this transformation, the researcher analyzed the distinctive features of the sounds involved. Initially, the vowel [u] is characterized by being [+high], [+back], [+rounded], and [+syllabic], while the vowel [e] is [+mid], [+front], [-rounded], and [+syllabic]. In the transformed state, the [u] become the voiced velar fricative [ɣ] and the labio-velar approximant [w], preserving the rounding and backness features of [u]. The [ɣ] is [+voiced], [+velar], [+fricative], and [-syllabic], while [w] is [+voiced], [+labio-velar], [+approximant], [+consonantal], [+sonorant], and [+continuant]. The phonological rule governing this change can be formally stated as [u] transforming into [ɣw], specifically in the context before [e]. Using distinctive features, this rule can be detailed as follows: a [+high], [+back], [+rounded], [+syllabic] vowel [u] becomes [-syllabic], [+continuant], [+consonantal], [+velar] [ɣ] followed by [+consonantal], [+sonorant], [+continuant], [+labio-velar] [w] when it precedes a [+mid], [+front], [-high], [-rounded], [+syllabic] vowel [e]. In conclusion, the observed transformation from [u] to [ɣw] before [e] is a clear example of prothesis. This process involves inserting the voiced velar fricative [ɣ] to maintain the non-syllabic feature and the labio-velar approximant [w] to retain the original vowel's rounding and backness).

Conclusions

The comprehensive analysis of phonological changes in informal Panamanian Spanish revealed several key findings. The study identified prevalent phonological processes such as elision, assimilation, and prothesis, which contribute to the distinctiveness of the dialect and reflect the linguistic evolution within the region. Elision, notably observed in suffixes like -ado, -ido, and -ada, demonstrates a common phonological phenomenon in Panamanian speech, indicating a pattern of sound weakening and omission that transcends social classes and geographic regions. Additionally, the elimination of consonants like /r/ and the cluster reduction of sounds such as /da/ reflect the influence of Caribbean Spanish on the phonological features of Panamanian Spanish, adding complexity to the language's sound system. The study also highlights the frequent use of assimilation in informal speech in Panama, showcasing the adaptability and fluidity of language in everyday communication. Moreover, the unique phonological transformation of prothesis, where the vowel [u] transforms into [ɣw] before the vowel [e], contributes to the richness and diversity of Panamanian Spanish. By employing distinctive feature analysis and qualitative methods, the research provides valuable insights into the phonological changes in Panamanian Spanish, offering a deeper understanding of the language's evolution. Overall, the study underscores the importance of further exploration into Panama's distinctive phonological features and processes, as well as the need to investigate the historical influences and sociolinguistic factors shaping the language spoken in the country. It is expected that this paper will lead to more research regarding Panama's distinctive features and phonological processes. Also, the sociolinguistic area should be investigated to observe the past influences that the sounds of today have had.

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I am Isabel Tuñón, currently pursuing a Master's degree in Linguistics, focusing on areas such as phonology, morphosyntax, second language acquisition and critical discourse analysis. Previously, I earned a Bachelor's degree in Humanities with an emphasis in English. Professionally, I have worked as an English teacher, which has allowed me to apply linguistic theories in the classroom. My academic interests focus on a deep understanding of linguistic phenomena and their impact on language acquisition and use.

Declaration of interests

I declare that I have no conflict of interest that may have influenced the results obtained or the interpretations proposed in this research.

Statement of Authorship Responsibility

Author 1: Ideas; formulation or evolution of overarching research goals and aims. Management activities to annotate (produce metadata), scrub data and maintain research data (including



software code, where it is necessary for interpreting the data itself) for initial use and later re-use. Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data. Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection. Development or design of methodology; creation of models. Management and coordination responsibility for the research activity planning and execution. Preparation, creation and/or presentation of the published work, specifically visualization/data presentation. Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation). Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.

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