


## Article

# Sociolinguistic Awareness in Galician Bilinguals: Evidence from an Accent Identification Task

Gisela Tomé Lourido <sup>1,\*</sup> and Bronwen G. Evans <sup>2</sup> <sup>1</sup> Department of Linguistics and Phonetics, University of Leeds, Leeds LS2 9JT, UK<sup>2</sup> Department of Speech, Hearing & Phonetic Sciences, University College London, London WC1N 1PF, UK; bronwen.evans@ucl.ac.uk

\* Correspondence: g.tomelourido@leeds.ac.uk

**Abstract:** The inclusion of European minority languages in public spaces such as education, administration and the media has led to the emergence of a new profile of speakers, “new speakers”, who typically acquire a minority language through education, but vary in terms of their language experience and use. The present study investigated whether a distinctive variety spoken by Galician new speakers (neofalantes) has emerged in the community and whether listeners’ language background influences accent identification abilities and patterns. Galician-Spanish bilingual listeners completed an accent identification task and were asked to comment on factors influencing their decision. Results demonstrated that all listeners could identify Galician-dominant better than Spanish-dominant bilinguals but could not identify neofalantes. Neofalantes were categorised as both Spanish- and Galician-dominant, supporting the idea that neofalantes have a hybrid variety. This finding suggests that listeners have a gradient representation of language background variation, with Galician-like and Spanish-like accents functioning as anchors and the neofalantes’ accent situated somewhere in the middle. Identification accuracy was similar for all listeners but neofalantes showed heightened sensitivity to the Galician-dominant variety, suggesting that evaluation of sociophonetic features depends on the listener’s language and social background. These findings contribute to our understanding of sociolinguistic awareness in bilingual contexts.



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**Keywords:** new speakers; accent identification; sociolinguistic awareness; bilingual speech processing; Galician phonetics; minority languages

## 1. Introduction

When we receive a phone call from an unknown number, if it is a person we know we can often recognise their voice even if we only hear the word ‘hello’. When we do not know the person, we are still able to infer some of their characteristics, e.g., gender, geographical origin, language background, based on their speech. Extensive research in sociolinguistics, phonetics and speech perception over the last few decades has confirmed our intuition that listeners are sensitive to accent variation (e.g., Giles 1970; Lambert et al. 1960; Preston 1989) and has provided evidence that we use accent variation to understand speech (e.g., Niedzielski 1999; Strand 1999; Strand and Johnson 1996). However, the process of how listeners extract indexical information from the speech signal and use it in speech processing is not yet fully understood.

An interesting context to investigate how a set of phonetic features may become associated with a particular group of speakers is the emergence of a new accent in a community, i.e., how linguistic features become ‘enregistered’ as a variety (Agha 2003; Johnstone et al. 2006; Silverstein 2003). In minority language communities in Europe, a new profile of speakers has emerged as a result of the inclusion of minority languages in public spaces such as education, administration and the media. These changes in the sociolinguistic landscape have also led to changes in the symbolic value and transmission of minority languages (Ramallo 2013), with some speakers learning them through schooling

or immersion programmes for the first time. These speakers are known as ‘new speakers’ (O’Rourke et al. 2015). Although the bilingual experience of new speakers varies widely in terms of language exposure, use and proficiency, this new profile of speakers typically has little or no home exposure to the minority language, and instead typically acquire the language through education (O’Rourke et al. 2015).

In the bilingual community of Galicia, in the north west of the Iberian peninsula, the ‘new speaker’ (neofalante, in Galician) label is used within the community to designate early bilinguals who learn Spanish at home, but switch language dominance to Galician in adolescence for ideological reasons (O’Rourke and Ramallo 2011, 2015; Ramallo 2013; Tomé Lourido and Evans 2019). Unlike new speakers in other bilingual contexts, neofalantes usually have early exposure to and high competence in Galician, which do not necessarily come exclusively from schooling; but also from acquiring the language from the environment (Ramallo and O’Rourke 2014), e.g., through grandparents, the wider community. Previous research has investigated the consequences of the switch in language dominance on their speech production and found that neofalantes pattern with Galician-dominant speakers in the production of certain phonetic variables, but with Spanish-dominant speakers in the production of others, exhibiting a hybrid variety (Tomé Lourido and Evans 2019). The current study aims to investigate whether the neofalantes’ accent is sufficiently distinct for listeners in the community to recognise it, and therefore emerging as a variety, and whether the listener’s language background influences the patterns of accent identification. To our knowledge, this is the first experimental study investigating whether the variety used by new speakers can be identified by listeners in the community and contributes to our understanding of sociolinguistic awareness in bilingual contexts.

## 2. Literature Review

### 2.1. Identifying Accents and Talkers

Language attitude studies have investigated how listeners use the indexical information embedded in the speech signal to draw inferences about speakers’ regional or social background (Giles 1970, 1971a, 1971b; Giles and Powesland 1975). Work in perceptual dialectology has provided further evidence that listeners are sensitive to regional variation by examining naive listeners’ perception of dialect boundaries. In a seminal study, Preston (1986, 1989) gave American English speakers maps of the United States and asked them to label the places where they judged people to speak differently. This technique also enabled elicitation of attitudes towards the selected accents (see also Preston 1996, 1999). Crucially, this work showed that, in general terms, listeners agree on the attitudes and stereotypes associated with the accents. However, more recent research has revealed that the social meaning of accent features emerges in the context of language use: the particular accent features listeners tune into and how these are evaluated depend on other perceived characteristics of the speaker (Campbell-Kibler 2011; Levon 2014; Montgomery and Moore 2018; Pharo et al. 2014) and the background of the listener (Jaeger and Weatherholtz 2016). Other studies have shown that listeners can group speakers according to regional accent but that this is affected by listeners’ own accent background and their experience with a given accent. In a series of studies, Clopper and Pisoni (2004, 2006) presented American listeners with sentences read by talkers from six different American English dialects in a forced-choice categorisation task and found that listeners were able to distinguish broad dialect categories (New England, South and South Midland and North Midland and West). Performance in these tasks was modulated by participants’ background: listeners who had lived in different areas performed better than those who had only lived in one area and, additionally, listeners who lived in a particular region performed better with the accent from that region. These results were taken to mean that greater exposure to linguistic variation and specific experience with one variety benefit accent categorisation. Similar results have been found using free classification tasks (Clopper 2008; Clopper and Pisoni 2007).

Listeners are not only sensitive to variation that signals geographical origin but also other social factors, including ethnicity. Using a matched-guise technique, [Purnell et al. \(1999\)](#) showed that landlords discriminated against prospective tenants based on the inferences they made about the speaker's ethnicity from hearing their accent on the phone. Baugh referred to this as 'linguistic profiling', a process "based upon auditory cues that may be used to identify an individual or individuals as belonging to a linguistic subgroup within a given speech community, including a racial subgroup" ([Baugh 2000](#), p. 363). There is extensive evidence that listeners are sensitive to variation and use it to evaluate speakers, but less is known about the levels of processing involved in the extraction and use of indexical information. Using a neuroimaging technique, magnetoencephalography (MEG), [Scharinger et al. \(2011\)](#) presented listeners with the sentence-initial 'hello' tokens from [Purnell et al. \(1999\)](#) to investigate when the change in accents was detected. Results from the mismatch negativity (MMN) response to accent changes showed that the extraction of accent features occurs very rapidly and is pre-attentive, categorical and speaker-independent. The authors propose that, given that the stimuli presented were acoustically variable, accent extraction involves a process of abstraction by which low-level acoustic information is mapped to a memory trace associated with a phonetic feature which is linked to a social category, in this case, accent background. Another important finding from this study is that accent information appears to be processed in the same way as speaker voice information. A recent study has provided further evidence that indexical information is processed at a relatively early stage. Although research that presented listeners with synthetic speech had suggested that non-linguistic information is ignored at early stages of processing, [Tuninetti et al. \(2017\)](#) found that when presented with natural speech, listeners are sensitive to indexical information (gender and regional background) at an unattended low level of processing.

An interesting question that emerges from this research is concerned with when in development listeners start to acquire the sociolinguistic competence that enables them to identify the regional and social background of talkers by associating a set of phonetic features with a social category. Studies using free classification tasks have shown that non-native listeners ([Clopper and Bradlow 2009](#)), and children, some as early as the age of 4–5 years old ([Jones et al. 2017](#)), are also able to group speakers into broader accent categories, although they are less accurate than adult native listeners. These results suggest that indexical and phonological categories are acquired together in first (L1) and second language (L2) acquisition ([Clopper and Bradlow 2009](#)).

One category that listeners learn to discriminate very early on is that of their native language. [Nazzi et al. \(2000\)](#) used a head-turn preference procedure to show that 5-month-old American infants could always discriminate between languages either when their native language was one of the two languages presented or when the two foreign languages belonged to different rhythmic classes (e.g., Japanese vs. Italian), but not when the two foreign languages belonged to the same rhythmic class (e.g., Italian vs. Spanish). In a similar study, [Butler et al. \(2011\)](#) showed that 5-month-old infants were able to discriminate between their native (South-West English) accent and an unfamiliar regional accent (Welsh English), but were unable to differentiate two unfamiliar regional accents (Welsh English and Scottish English).

Indeed, other research suggests that the ability to discriminate unfamiliar accents does not develop until later in life. [Girard et al. \(2008\)](#) showed that 5–6-year-old French-speaking children distinguished their own accent from a foreign accent, but could still not discriminate between different regional varieties of French. These findings indicate that, at this age, young children have not yet developed fine-grained perceptual representations for regional accents, at least based on the varieties tested here. [Flocchia et al. \(2009\)](#) replicated this result in a similar study with British children and suggested that the acoustic distance between the accents could have played a role in children's discrimination patterns. They demonstrated that consonant differences between the native and the foreign accent were larger and interpreted this finding to mean that foreign accents introduce greater distortions to the signal than regional accents making the accent itself more distinctive. Similar results

were found for American children, aged 5–6 years old, who were able to discriminate their native accent from an L2 accent (Indian English, produced by speakers who acquired English as an L2), but who were unable to discriminate between their native and a regional accent, or a regional vs. L2 accent (Wagner et al. 2014). Based on these findings, it has been hypothesized that children have a gradient representation of dialect variation with representations organised relative to the native accent, such that those a greater distance apart are easier to discriminate (Wagner et al. 2014).

Much less research has examined accent identification in the context of bilingual communities. Evans and Lourido (2019) replicated Wagner et al. (2014)'s study with monolingual children in London, U.K., but also showed that bilingual children were able to discriminate talkers in all three conditions (native vs. regional, regional vs. L2 and native vs. L2), suggesting that early experience with variation benefits identification of talkers from different language backgrounds. Arguably, bilingual children had more exposure to variation in a community where that variation is useful in identifying talkers and navigating relationships (Evans and Lourido 2019, p. 156), and this most likely led to an earlier development of sociolinguistic awareness in comparison to monolingual peers.

Studies with adult bilingual listeners additionally show that identification is affected by listeners' identity as well as experience. Tan (2012) investigated whether Singaporean bilingual listeners were able to identify the ethnicity of English-Chinese, English-Malay and English-Tamil bilingual speakers. The results showed that listeners identified Chinese speakers more accurately than Malay and Indian speakers, in this order. The author argues that the findings could be explained by the amount of exposure listeners had to the different accents; Singaporean-Chinese speakers make up most of the population and, therefore, listeners in the community are likely to hear this variety more frequently. There was also a significant effect of age; younger Singaporeans were less accurate than older Singaporeans. The author suggests that the younger group may have a more national-based, rather than ethnic-based identity, compared to the older group and their performance may reflect this link between their own identity and perception. In a minority language context, Mayr et al. (2020) showed that both Welsh-English bilinguals and English monolingual listeners from Wales were able to identify whether someone can speak Welsh on the basis of their accent in English above chance level, although performance was lower than in similar studies with L2 speakers. Listeners performed better with talkers from the same area of Wales as them, but there was no difference between bilingual and monolingual listeners (Mayr et al. 2020, p. 752).

In the context of the current study, in which all listener groups are bilingual in Galician and Spanish, it is possible that, differences in language background will lead to differences in accent identification patterns. Given that the degree of distinctiveness will likely be more similar to that of regional than foreign accents as regardless of language dominance, all speakers will likely have a Galician accent (e.g., in contrast with L2 Galician speakers from a different part of Spain), how 'Galician' a speaker sounds will vary as a function of their language dominance (Amengual and Chamorro 2015; Tomé Lourido and Evans 2019; Agüete Cajiao 2019), whether they come from an urban or rural environment (Mayr et al. 2019; Tomé Lourido and Evans 2019; Regueira and Fernández Rei 2020) and other factors. As well as greater exposure with a given variety leading to better identification, the participants' social background and aims may also influence identification patterns.

How might listeners store and consequently access indexical information during speech processing to enable them to group talkers into different social categories? As mentioned above, recent work has proposed that accent information is processed in the same way as speaker voice information (Scharinger et al. 2011). Such work has highlighted the likely contribution of episodic memory in models of speech processing (e.g., Nygaard and Pisoni 1998). Episodic models of lexical access propose that phonetic variation in the speech signal, such as indexical or talker information, is not discarded in speech perception, but instead is retained and stored in memory (Docherty and Foulkes 2014; Goldinger 1998). Indeed, it has been shown that listeners can use fine-grained phonetic

information, such as VOT, to identify talkers (Allen and Miller 2004). Additionally, work on talker identification has consistently shown a Language Familiarity Effect (LFE), i.e., listeners are better at identifying talkers in their native language (e.g., Fleming et al. 2014; Goggin et al. 1991; Perrachione et al. 2011; Thompson 1987; Levi 2019). For example, Goggin et al. (1991) showed that monolingual English listeners were better at identifying English voices than German ones, and German listeners exhibited the opposite pattern. Similarly, English monolinguals were better at identifying English voices when compared to Spanish voices, with intermediate performance with Spanish-accented voices, but the pattern did not hold for English-Spanish bilinguals. One possible interpretation of these findings is that language familiarity is beneficial for voice recognition. However, whether this effect is related to language comprehension or familiarity with the phonological structure of the language is unclear.

Perrachione et al. (2011) examined whether knowledge of phonology played a role in voice recognition. In this experiment, dyslexic listeners, who have impaired phonological processing, identified voices in English (native language) and Chinese (unfamiliar language). Whilst the monolingual English control group were more accurate with the English voices, displaying a language familiarity effect, dyslexic listeners were no better able to identify English than Chinese talkers. These results led the authors to suggest that phonological representations are important for recognising speakers and that the process of voice recognition functions by comparing the segments in the input voice with the listener's own phonological representations. Thus, voice recognition is more difficult when listeners cannot relate the speaker's segments to their own representations because they are either missing (when they hear an unfamiliar language) or impaired (in the case of dyslexic listeners). On the other hand, Fleming et al. (2014) have argued that as the LFE is already apparent in 7–8-month-old infants (Johnson et al. 2011; Nazzi et al. 2000), who cannot understand speech, the effect could also be driven by experience with native phonological categories. Fleming et al. (2014) presented English and Chinese adult listeners with unintelligible time-reversed sentences in English and Mandarin, which they argued preserved phonological information but meant that the speech was unintelligible. Both listener groups rated pairs of native-language speakers as more dissimilar than foreign-language speakers, suggesting that the LFE is based not on comprehension, but on familiarity with the native language phonological system. With the aim of elucidating the underlying cause of the LFE, Johnson et al. (2018) claim that relative familiarity with a variety, i.e., the frequency of encountering talkers from that linguistic background, is not enough to account for the LFE, which is instead driven by 'attunement' to the underlying phonological structure. They tested this hypothesis by asking English listeners to identify talkers with a familiar and unfamiliar variety of English (Australian and North American English). They found no differences in performance between the two varieties, which supports the idea that familiarity alone does not account for the LFE. The authors argue that Australian and North American English share the same underlying abstract phonology and propose that it is the listeners' 'attunement' to the phonology that drives this effect. However, they also point out that it is not clear whether this would be the case for other varieties differing in their phonological structure, e.g., syllable structure, rhythm and that further research is needed to 'map the boundaries of phonological attunement' (Johnson et al. 2018, p. 643).

In sum, although the ability to identify accents develops relatively late in life and at different rates in monolingual and bilingual communities, listeners use the indexical information embedded in the speech signal to draw inferences about speakers' regional, social and language background. Additionally, listener's ability to categorise talkers is likely affected by their own language background, experience and possibly even attitude towards a given variety. Finally, the ability to identify accents may function in a similar way to voice identification with both familiarity and 'attunement' to the phonological system playing a role.

## 2.2. *The Neofalantes' Accent as an Emerging Variety*

New speakers in minority language communities have been defined as “individuals with little or no home or community exposure to a minority language but who instead acquire it through immersion or bilingual educational programs, revitalization projects or as adult language learners” (O’Rourke et al. 2015, p. 1). They have been documented in most minority language communities in Europe: Ireland (O’Rourke and Ramallo 2010; Walsh and O’Rourke 2014), Wales (Robert 2009), Scotland (McLeod and O’Rourke 2015; Nance et al. 2016; O’Rourke and Walsh 2015), Isle of Man (Ó hÍfearnáin 2015), Provence (Costa 2015), Brittany (Hornsby 2005, 2009, 2015), Corsica (Jaffe 2015), Galicia (O’Rourke and Ramallo 2010, 2013a, 2013b, 2015; Ramallo 2013; Ramallo and O’Rourke 2014; Tomé Lourido and Evans 2015, 2017, 2019; Aguete Cajiao 2019; Regueira and Fernández Rei 2020), Catalonia (Pujolar and Puigdevall 2015; Woolard 2011) and the Basque Country (Ortega et al. 2014; Ortega et al. 2015). Though this label is particularly useful in examining their sociolinguistic ideologies and practices, it is important to understand that they are a heterogeneous group from the point of view of language acquisition, ranging from early bilinguals with great exposure to the minority language to L2 learners with varying degrees of proficiency.

There is limited experimental research investigating the phonetics and phonology of new speakers of minority language communities. Nance (2013, 2015) and Nance et al. (2016) investigated the speech of Gaelic speakers in Scotland. Nance (2015) compared the speech of young adults attending Gaelic-medium secondary schools in Glasgow, an area with low numbers of Gaelic speakers, young adults attending Gaelic-medium secondary schools in the Isle of Lewis, an area with the densest concentration of Gaelic speakers and a group of older adults from Lewis who were considered ‘traditional speakers’. Young speakers from Glasgow differed from both young and older speakers on Lewis in the three phonetic variables investigated, the high back vowel /u/, the lateral system and intonation, suggesting that the new speakers’ variety is different from that of previous generations. However, when comparing the production of word-final rhotics by highly proficient urban adult new speakers and ‘traditional speakers’, Nance et al. (2016) found that some new speakers distinguished traditional Gaelic rhotic categories, but others did not. The variation in the new speaker group was not only accounted for by L1 interference, but also how they constructed their identity as Gaelic speakers.

Nance (2015, p. 556) states that the ‘new speaker’ label is not used by New Gaelic speakers themselves, but is instead an analytical label which has emerged from the minority language revitalisation literature. However, this is not the case in all communities. In Galicia, a bilingual community situated in the north west of the Iberian Peninsula, the new speakers’ group has become socially salient within certain spheres of Galician society, and the ‘neofalante’ label has been used beyond academia to designate the social group (O’Rourke and Ramallo 2011, 2015; Ramallo 2013; Tomé Lourido and Evans 2019) such that it is sometimes used as a self-defining category by neofalantes (O’Rourke et al. 2015, p. 13). For example, there is a Twitter account named ‘O neofalante’, ‘The new speaker’ (Neofalante 2021). Most Galician neofalantes are bilinguals who learn Spanish at home, but have early exposure to Galician and high competence in both languages. O’Rourke and Ramallo describe neofalantes as “individuals for whom Spanish was their language of primary socialization, but who at some stage in their lives (usually early to late-adolescence) have adopted Galician language practices and on occasions displaced Spanish all together” (O’Rourke and Ramallo 2015, p. 148, see also O’Rourke and Ramallo 2010, 2011, 2013a, 2013b; Ramallo 2010, 2013; Ramallo and O’Rourke 2014). O’Rourke and Ramallo (2015) and Ramallo (2010) suggest that neofalantes’ linguistic behaviour can contribute to the transformation of the sociolinguistic reality and characterise these speakers as proponents of social change, arguing for ‘neofalantismo’ as a social movement, with neofalantes an active minority, one in which “individuals or groups [ . . . ] through their behaviour attempt to influence both the attitudes and practices of the majority and in doing so, bring about social change” (O’Rourke and Ramallo, p. 151).

Impressionistic descriptions of neofalantes' speech have proposed that they use a Spanish-accented variety of Galician (Freixeiro Mato 2014; González González 2008; Ramallo 2010), which has been referred to as 'New Urban Galician' (Novo galego urbano, Dubert García 2002; González González 2008; Regueira 1999a; Vidal Figueroa 1997). Tomé Lourido and Evans (2019) were the first to provide a detailed acoustic description of the variety of Galician used by neofalantes and also to examine potential differences in their perception of Galician with respect to other bilingual groups. Neofalantes in this study were early bilinguals who changed from being dominant in Spanish to speaking Galician almost exclusively in adolescence for ideological, political or socio-cultural reasons. A series of studies examined three variables which differ in Galician and Spanish: Galician mid-vowel contrasts / $\epsilon$  e/ and / $\circ$  o/, which are not contrastive in Spanish; the Galician contrast sibilant fricative contrast /s  $\int$ /, where Spanish only has /s/; and the reduction of word-final vowels, a Galician-specific feature. Neofalantes were compared to two early bilingual groups of Galician-dominant and Spanish-dominant speakers. For vowels, the perception tasks revealed that neofalantes' performance on a mid-vowel identification task was not different from that of Spanish-dominants and was poorer than that of Galician-dominant listeners. For the fricative contrast, though the three groups had a categorical contrast between the two sibilants, Galician-dominants had an earlier boundary than both neofalantes and Spanish-dominant groups. In production, neofalantes also patterned with Spanish-dominant speakers in their realisation of mid vowels, neutralising the contrast, and sibilant fricatives, producing a smaller contrast than that of Galician-dominants. However, they patterned with Galician-dominants in the production of reduced final vowels, exhibiting a hybrid variety made up of a combination of traditional Galician and Spanish features.

What is yet to be established is whether Galician listeners can identify the neofalantes' accent as a distinctive variety in the community, i.e., whether a particular set of linguistic features have become associated with the label. Agha (2003, p. 231) proposed the term 'enregisterment' to describe the "processes through which a linguistic repertoire becomes differentiable within a language as a socially recognized register of forms" (see also Silverstein 2003). Since then, this term has been also used to describe the emergence of new accents. For example, Johnstone et al. (2006) and Johnstone and Kiesling (2008) investigated how a set of linguistic features which were not noticed by listeners at first, became linked to socio-economic class, then associated with a region and 'enregistered' as a dialect called 'Pittsburghese', spoken in the United States. In this case, the linguistic features associated with 'Pittsburghese' were highly enregistered, as they were overtly linked to specific sociolinguistic spaces and discussed in metalinguistic commentary. Although Tomé Lourido and Evans (2019) found no evidence that neofalantes produced phonetic features which were distinctively different from those of Galician- and Spanish- dominant bilinguals, it is possible that listeners in the community use other features not measured in that study to identify the neofalantes variety. The current study sets out to investigate this question using an accent identification task.

### 2.3. The Current Study

The study aims to investigate whether a distinctive variety spoken by Galician neofalantes has emerged in the community and whether listeners' language background influences accent identification abilities and patterns. To address these questions, Galician-Spanish bilingual listeners completed an accent identification task and were asked to comment on factors influencing their decision.

Based on the research reviewed, we hypothesise that all Galician listeners will be able to categorise talkers from a Galician-dominant and Spanish-dominant background. A question that remains though, is whether listeners are able to recognise the neofalantes' accent. In the study, listeners heard sentences produced by bilingual speakers belonging to three groups (neofalantes, Galician-dominant and Spanish-dominant speakers) and categorised them according to their language background to address two research questions:

1. Are neofalantes' shifts in production sufficient for listeners in the community to identify their accent?
2. Does identification ability depend on listeners' language background?

If listeners are able to recognise the neofalantes' accent, this would indicate that it has become enregistered as a variety, one that has become associated with a set of linguistic features and is recognisable as a distinctive variety in the community. Nevertheless, if listeners are not able to link the neofalantes' accent with the sociolinguistic label, whether they classify neofalantes as Spanish-dominant or Galician-dominant speakers would be informative of whether neofalantes' speech production patterns have changed after the language dominance switch. Language ability, language familiarity and attunement to the phonological system have been shown to be beneficial for talker identification (Fleming et al. 2014; Goggin et al. 1991; Johnson et al. 2018; Levi 2019; Perrachione et al. 2011; Thompson 1987) and experience with a particular variety appears to enhance the accuracy of identification of that variety (Clopper and Pisoni 2004, 2006). If accent categorisation ability relies on similar mechanisms to talker identification skills, it might be influenced by similar factors. It is unclear whether Galician- and Spanish-dominant varieties would be considered to have a similar or different underlying phonology in the 'phonological attunement' account and therefore it is difficult to use this to inform the predictions. However, an effect of language ability, or more specifically more robust phonological and phonetic representations of the language, would predict an advantage in accent identification for Galician-dominant listeners. In contrast, a LFE would predict similar performance for all listener groups, as they live in a bilingual environment where they listen to both Galician and Spanish on a daily basis.

### 3. Methods

#### 3.1. Participants

This study set out to test the wider community and therefore, the sample is formed of a pool of varied participants from different backgrounds and professions. A total of 162 participants took part in the online task; 20 participants were excluded because they did not meet the criteria. The remaining 142 participants were raised in Galicia, had not lived anywhere else for more than seven years and were bilingual in Galician and Spanish. Their age ranged between 18–54 years old (median = 27). After the experiment, they completed the language background questionnaire used in Tomé Lourido and Evans (2019). The questionnaire was used to classify participants into the three groups of interest, following the criteria in Tomé Lourido and Evans (2019):

- Neofalantes: raised predominantly in Spanish (i.e., their parent(s) used to speak to them in Spanish), but decided to adopt Galician as their dominant language in adolescence (14–20 years old, median = 16) for ideological or cultural reasons. Since this switch, they have mainly spoken Galician.
- Galician-dominant bilinguals: raised predominantly in Galician (i.e., their parent(s) spoke Galician to them) and have always spoken mainly Galician.
- Spanish-dominant bilinguals: raised predominantly in Spanish (i.e., their parent(s) spoke Spanish to them) and have always spoken mainly Spanish.

This resulted in 13 neofalantes (6 female, 7 male), 58 Galician-dominants (34 female, 24 male) and 61 Spanish-dominants (34 female, 24 male). The remaining 10 participants did not belong to any of these three groups, but were included in the first set of analyses, as these were focussed on whether the three groups of speakers were correctly identified, regardless of listeners' language background. The second set of analyses examined specifically whether listeners' language background played a role in identification, and therefore those 10 participants were excluded. Two pilot participants completed the experiment before data collection took place; their data were not included in any of the analyses. None of the subjects reported any speech, hearing or language disorders at the time of testing.



### 3.2. Stimuli

The stimuli consisted of the first sentence of ‘The north wind and the sun’ passage in Galician: *O vento do norte e mais o sol porfiaban sobre cal deles era o máis forte* (The North Wind and the Sun were disputing which was the stronger). This sentence was selected because it includes key phonetic variables which have been shown to differ in the speech of Galician- and Spanish-dominant speakers: mid vowels in stressed position (Amengual and Chamorro 2015; Tomé Lourido and Evans 2019) e.g., *norte*, unstressed word-final vowels, e.g., *vento*, and the voiceless alveolar fricative (Tomé Lourido and Evans 2019), e.g., *sobre*. The sentence also includes other Galician-specific features, such as the voiced velar nasal in syllable final position (Freixeiro Mato 2006; Regueira 1999b), e.g., *porfiaban* and connected speech processes (Freixeiro Mato 2006; Regueira 1999b), e.g., *norte e, mais o, era + o*. The sentence was extracted from recordings of the passage used in Tomé Lourido and Evans (2019) produced by 56 speakers: 14 neofalantes (7 female, 7 male), 22 Galician-dominant speakers (12 female, 10 male) and 20 Spanish-dominant speakers (12 female, 8 male), classified following the same method used for listeners. The speakers were early bilinguals in Galician and Spanish recruited from the University of Santiago de Compostela who grew up in Galicia, had not lived anywhere else for more than a year and were 18–30 years old at the time of the recording. They came from both urban and rural backgrounds (neofalantes: 8 urban, 6 rural; Galician-dominant: 5 urban, 17 rural; Spanish-dominant: 11 urban, 9 rural). Speakers raised in one of the main 7 Galician cities (A Coruña, Pontevedra, Ourense, Lugo, Santiago de Compostela, Vigo and Ferrol) were considered to come from an urban background. Speakers raised in smaller towns, villages or smaller areas within villages (e.g., A Baña, Aguiño, Noia, Porto do Son, Silleda) were considered to come from rural backgrounds. The stimuli were scaled for intensity to 65 dB and 50ms silence was added at the beginning and end of each file. The duration of the stimuli ranged from 3.001 s to 5.510 s ( $M = 4.038$  s). All processing was done using Praat (Boersma and Weenink 2015). Stimuli were presented in a random order.

### 3.3. Procedure

Participants completed the accent identification task online using Qualtrics (2015). All the instructions were written in Galician. The definitions and the illustration of the trial procedure presented below correspond to English translations (for the Galician version see Appendix A). Before the task started, definitions for the three different groups were provided as follows:

- (the speaker) Usually speaks Galician: This person speaks Galician in their daily life and has always spoken more Galician than Spanish.
- (the speaker) Usually speaks Spanish: This person speaks Spanish in their daily life and has always spoken more Spanish than Galician.
- (the speaker) Is a new speaker: This person used to speak more Spanish, but now they speak Galician in their daily life.

These definitions were provided in case listeners were unfamiliar with the neofalantes label; although the label is widely used, listeners were recruited to be from a diverse set of backgrounds and not all may have been familiar with it. The trial procedure is illustrated in Figure 1 (for the Galician version, see Figure A1). Participants were instructed to listen to each sentence over headphones and indicate to which group the speaker belonged. The sentence was played only once. Participants were subsequently asked to comment on whether particular factors had influenced their decision (see Section 5. Discussion). In this case, they were allowed to listen to the audio again with no limit on the number of times. Although the experiment was distributed online, it was only advertised through friends and acquaintances of the first author to give some control over who participated and seek to guarantee that participants listened to the stimuli over headphones in a quiet environment. In fact, participants overall spent a considerable amount of time completing the task (mean experiment duration = 65.22 min), which indicates that they took the time to provide detailed comments. Given that the recruitment method was through friends

of friends, and that this was also the case for recruiting the speakers who produced the recordings, participants were asked whether they knew the speaker. Participants indicated that they knew the talker in 114 trials (1.56% of the total number of trials); these trials were excluded from further analysis. Finally, participants completed a language background questionnaire which elicited demographic data and information about their residential history and language background, including how they acquired and use their languages.

What group does this speaker belong to?

(the speaker) usually speaks Galician

(the speaker) usually speaks Spanish

(the speaker) is a new speaker

Next

Why do you think this person usually speaks Spanish?

Give an answer as specific as possible. For example, is there a particular sound or word which makes you think that this speaker usually speaks Spanish? You don't have to use technical language and don't worry about how you explain it. Just use your intuition.

If you would like to, you can listen to the audio again.

Do you know this person?

No Yes

Next

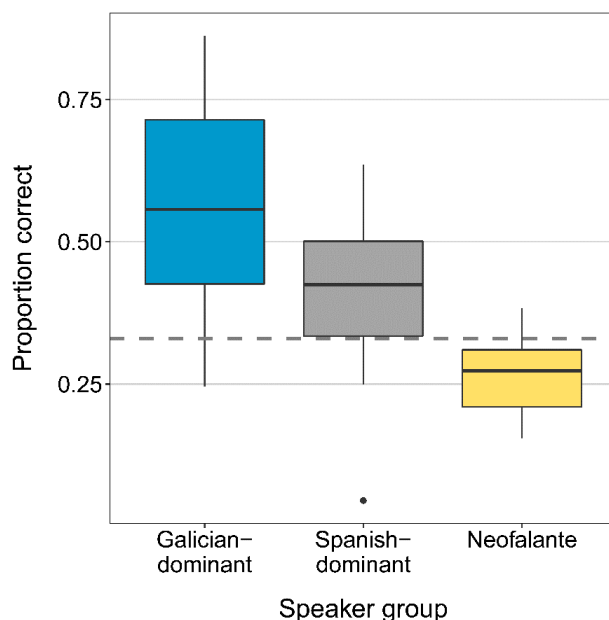
**Figure 1.** Representation of the procedure. First, participants identified to which group they thought the speaker belonged. Then, they provided comments about what influenced their decision. They also indicated whether they thought they knew the speaker.

## 4. Results

### 4.1. Can Listeners Identify the Neofalantes' Accent?

Figure 2 shows the identification score (proportion correct) for each of the speaker groups averaged over listeners ( $N = 142$  listeners). The data is available at <https://osf.io/4nwpv> (Supplementary Materials). To investigate which accents were identified at above chance level, the real data were compared to randomly generated data of corresponding dimensions. This method was selected instead of scoring the dependent variable as correct or incorrect and comparing the intercept to chance, because the experiment was a three-way discrimination task, and therefore chance level was not 50%. Three separate logistic regression models were fit to the real and fake data for each of the groups. The dependent variable was the binomial response (correct/incorrect) and the only predictor variable was

type of data (fake or real). Participant and item were included as crossed random effects. Table 1 shows the results of each of the models. Both Galician-dominant [Mean proportion correct (MProp) = 0.57] and Spanish-dominant speakers (MProp = 0.41) were identified at above chance level, but neofalantes were identified systematically worse than chance (MProp = 0.26).



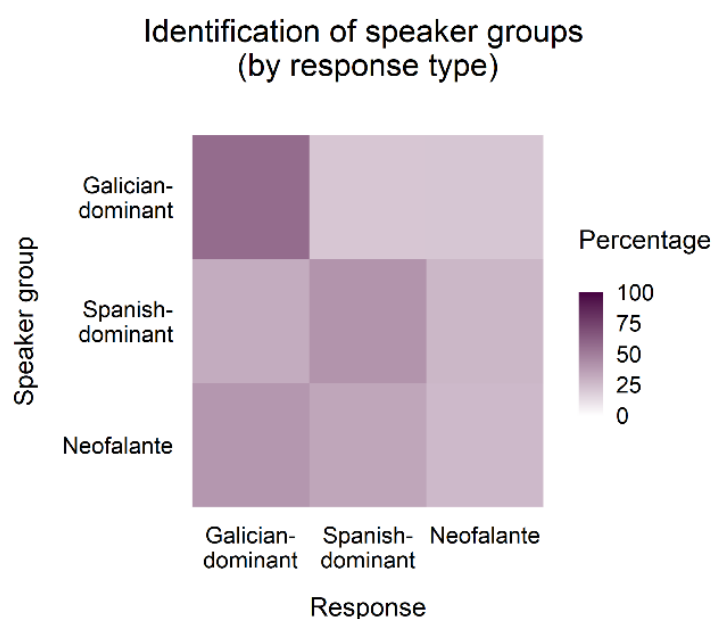
**Figure 2.** Boxplot showing accent identification scores (proportion correct) for all listeners. The three boxplots represent speaker group: Galician-dominant on the left, Spanish-dominant in the centre and Neofalantes on the right. The dashed line represents chance level performance.

**Table 1.** Summary of the results of the regression models for each speaker group compared to a random baseline. The baseline for the categorical predictor variable was the fake data. Numbers represent Estimates ( $\beta$ ), Standard Errors (SE), Wald statistics (z-values) and p-values.

	$\beta$	SE	z-Value	p-Value
<b>Model 1: Galician-Dominant Speakers</b>				
Intercept	-0.659	0.096	-6.839	<0.001
Real data	0.965	0.057	17.046	<0.001
<b>Model 2: Spanish-Dominant Speakers</b>				
Intercept	-0.704	0.085	-8.307	<0.001
Real data	0.329	0.059	5.582	<0.001
<b>Model 3: Neofalantes</b>				
Intercept	-0.608	0.063	-9.617	<0.001
Real data	-0.438	0.073	-5.963	<0.001

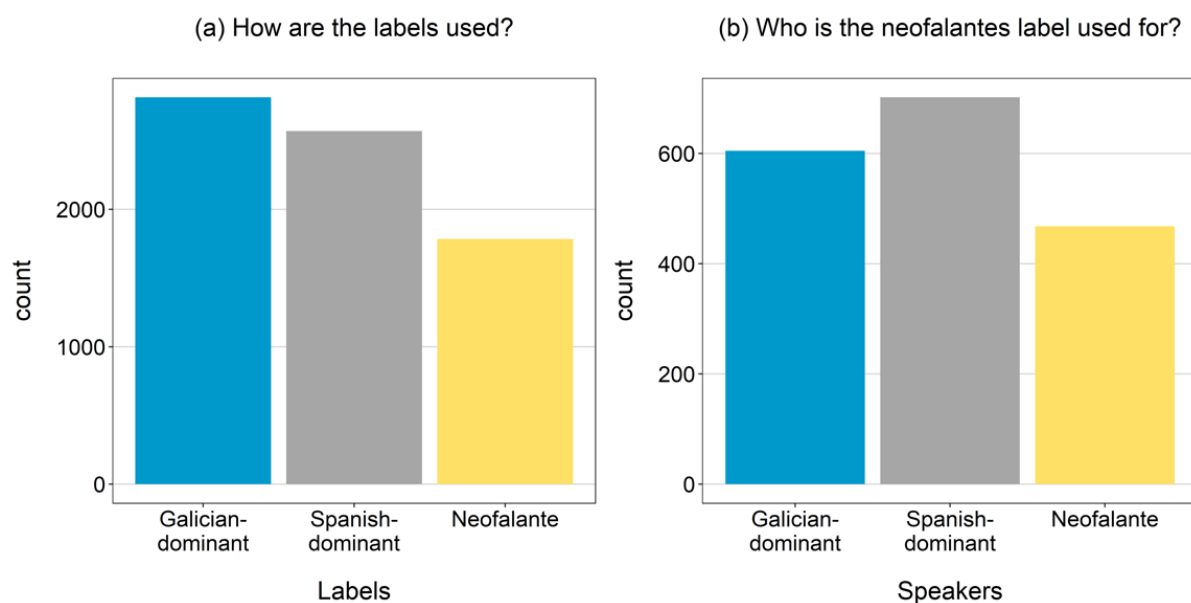
To further investigate whether there were any differences between the two groups of speakers that were identified above chance a separate regression model was fit to the binomial response (correct/incorrect) for Galician-dominant and Spanish-dominant speaker groups in the real data. Speaker group was included as the predictor variable, with Galician-dominant as the baseline. Participant and item were included as crossed random effects. The model revealed a significant difference in identification of Galician-dominant speakers when compared to Spanish-dominant speakers (Intercept:  $\beta = 0.343$ , SE = 0.169,  $z = 2.029$ ,  $p = 0.042$ ; Speaker group:  $\beta = -0.774$ , SE = 0.241,  $z = -3.210$ ,  $p = 0.001$ ); listeners were more accurate in identifying Galician-dominant speakers.

It is clear from these results that listeners could not recognise neofalantes based on their accent. Figure 3 displays the pattern of responses for each speaker group. The confusion matrix shows that neofalantes were not only identified as Spanish-dominant, but also as Galician-dominant speakers. To further explore this question, the responses that corresponded to when neofalantes were misidentified were analysed. An intercept-only logistic regression model was fitted to the categorical response (Galician-dominant vs. Spanish-dominant) when the neofalantes speaker group was misidentified. The model showed that the intercept is significantly different from zero ( $\beta = 0.163$ ,  $SE = 0.055$ ,  $z = 2.945$ ,  $p = 0.003$ ), which implies that the event probability is different from 0.5. This suggests that there is a bias in classifying neofalantes as Galician-dominant; they were classified as Galician-dominants 54% of the time and as Spanish-dominant 46% of the time (see Figure 3).



**Figure 3.** Confusion matrix showing the identification of speaker groups by response type. The *y*-axis represents the speaker group (Galician-dominant, Spanish-dominant, and Neofalantes and the *x*-axis represents the response all listeners gave per speaker group. The darker the colour the higher the percentage of responses in that category.

One possible explanation for the consistent misidentification of neofalantes would be the existence of a bias against choosing the neofalantes label. However, it was not the case that listeners did not choose this label. The left panel on Figure 4 illustrates the counts for each of the speaker labels and shows that all three labels were used for classification. Although the neofalantes label was used the least, the use of labels reflects the distribution of speakers: there were more Galician-dominant ( $N = 22$ ) and Spanish-dominant speakers ( $N = 20$ ) than neofalantes ( $N = 14$ ). Given that the neofalantes label was indeed used, but not for categorising the correct speakers, the question then remains as to which speakers were assigned this label. The right panel on Figure 4 shows counts of the use of the neofalantes label and reveals that it was used to identify Spanish-dominant and Galician-dominant speakers more often than neofalantes themselves.



**Figure 4.** Barplots showing (a) counts for each of the three speaker labels and (b) counts for the Neofalantes label. The plot on the left shows how often each of the three speaker groups labels was selected, with the speaker group labels on the x-axis (Galician-dominant, Spanish-dominant and Neofalantes and frequency counts on the y-axis. The plot on the right shows how often each speaker group (Galician-dominant, Spanish-dominant and Neofalantes) was identified as Neofalantes.

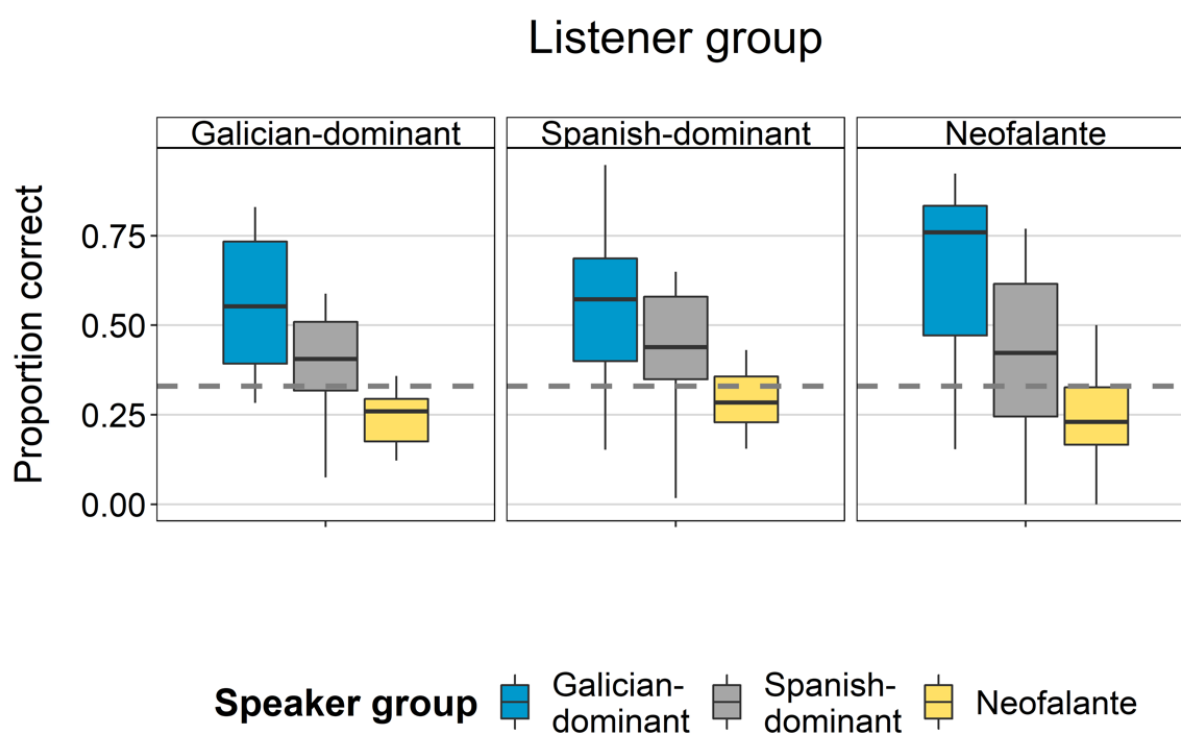
#### 4.2. Does Identification Ability Depend on Listeners' Language Background?

To investigate whether identification ability depended on listeners' language background, only data from the three groups of interest was included in the analyses. A logistic mixed effect regression was fitted on the binomial response (correct/incorrect), speaker group and listener group were included as fixed factors. Participant and speaker were included as crossed random effects. The main effects from this model were interpreted using Wald  $\chi^2$  tests, as reported by the `Anova()` function in the `car` package (Fox and Weisberg 2011) in R (R Core Team 2013);  $p$ -value  $< 0.001 = ***$ ,  $p$ -value  $< 0.01 = **$ ,  $p$ -value  $< 0.05 = *$ ,  $p$ -value  $> 0.05 = \text{n.s.}$  The main effect of speaker group was highly significant [ $\chi^2(2) = 34.8393 ***$ ]. As discussed in the previous section, Galician-dominant speakers were identified more accurately ( $M = 57\%$ ) than Spanish-dominant speakers ( $M = 42\%$ ), and both groups were identified more accurately than neofalantes, for whom identification was below chance ( $M = 27\%$ ). The effect of listener group was not significant [ $\chi^2(2) = 4.5787 \text{ n.s.}$ ], suggesting that language background did not affect overall identification. This can be seen in Figure 5, which shows the accent identification scores, and which illustrates that the pattern of identification was very similar for all three listener groups.

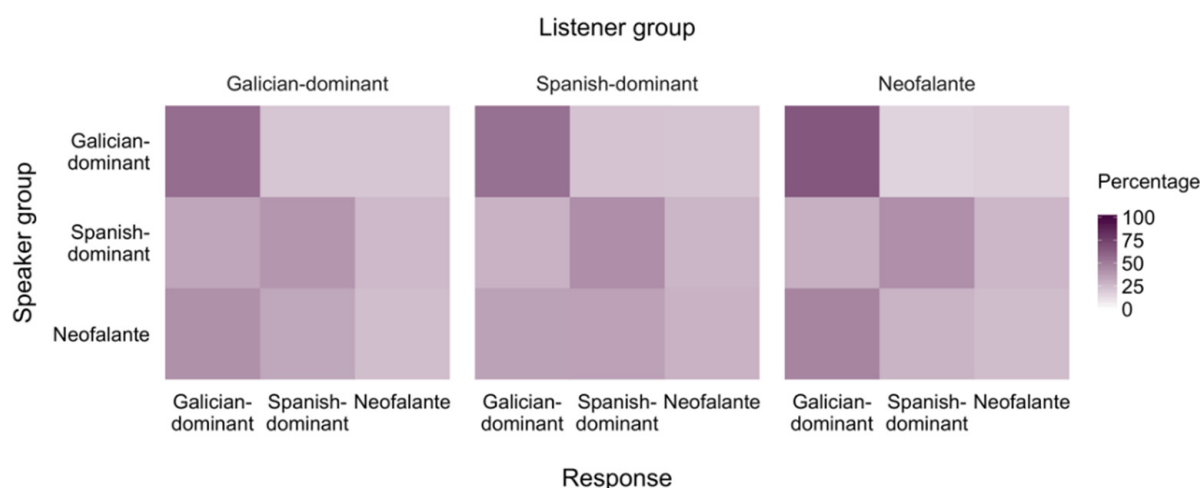
The analysis also showed a significant interaction between speaker group and listener group [ $\chi^2(4) = 12.4894 *$ ]. To follow up this interaction, pairwise post-hoc tests were carried out using the `lsmeans` package (Lenth 2016) in R, adjusting for multiple comparisons using the Tukey method. The interaction appeared to be driven by the identification of Galician-dominant speakers by neofalantes listeners when compared to both Galician-dominant (GD vs. NF:  $\beta = -0.446$ ,  $SE = 0.160$ ,  $z = -2.774$ ,  $p = 0.015$  and Spanish-dominant listeners (SD vs. NF:  $\beta = -0.504$ ,  $SE = 0.159$ ,  $z = -3.161$ ,  $p = 0.004$ ). No other interactions were significant. This indicates that neofalantes were better ( $M = 66\%$ ) than the other two listener groups (GD:  $M = 56\%$ , SD:  $M = 55\%$ ) at identifying Galician-dominant speakers.

This effect is illustrated in Figure 6, which displays the identification of speaker groups by response type and listener group. The graph shows that the cell with the darkest colour (i.e., highest number of accurate responses) corresponds to the identification of Galician-dominant speakers by neofalantes listeners (matrix on the right), indicating that neofalantes were more accurate than Galician-dominant and Spanish-dominant listeners at identifying Galician-dominant speakers, as revealed by the significant interaction

between speaker and listener groups in the regression model. Another apparent difference in the classification pattern concerns which listener groups classified neofalantes as Galician-dominant speakers. To investigate if groups differed in their classification of neofalantes, a mixed-effect logistic regression model was fit to the binomial response (Galician-dominant/Spanish-dominant) from the subset of data where neofalantes were identified incorrectly. Listener group was included as a fixed factor in the model, with neofalantes as a baseline, and participant was included as a crossed random effect. The model (Intercept:  $\beta = 0.529$ ,  $SE = 0.210$ ,  $z = 2.511$ ,  $p = 0.012$ ) revealed that Galician-dominant listeners did not differ from neofalantes listeners when labelling neofalantes speakers as Galician-dominant ( $\beta = -0.273$ ,  $SE = 0.233$ ,  $z = -1.176$ ,  $p = 0.239$ ), but Spanish-dominant listeners did differ from neofalantes listeners when labelling neofalantes speakers as Galician-dominant ( $\beta = -0.533$ ,  $SE = 0.232$ ,  $z = -2.295$ ,  $p = 0.022$ ). This suggests that neofalantes were identified as Galician-dominant more frequently by Galician-dominant listeners (56% of the time) and neofalantes themselves (62% of the time), than by Spanish-dominant listeners, who identified them as Galician-dominant 50% of the time and as Spanish-dominant 50% of the time.



**Figure 5.** Boxplot showing accent identification scores (proportion correct) by the three listener groups: Galician-dominant (left rectangle), Spanish-dominant (middle rectangle) and neofalantes (right rectangle). Boxplots represent speaker group: Galician-dominant on the left, Spanish-dominant in the centre and Neofalantes on the right. The dashed line represents chance level performance. The accent identification pattern was very similar for all three listener groups.



**Figure 6.** Confusion matrices showing the identification of speaker groups by response type and listener group (Galician-dominant, Spanish-dominant and Neofalantes). The *y*-axis represents the speaker group (Galician-dominant, Spanish-dominant, and Neofalantes) and the *x*-axis represents the response each listener group gave per speaker group. The matrix on the left corresponds to Galician-dominant listeners, the one in the centre to Spanish-dominant listeners and the one on the right to Neofalantes. The darker the colour the higher the percentage of responses in that category. Neofalantes listeners were better than the two other listener groups at identifying Galician-dominant speakers and neofalantes speakers were identified as Galician-dominant more frequently by Galician-dominant listeners and neofalantes themselves than by Spanish-dominant listeners.

## 5. Discussion

### 5.1. The Neofalantes' Accent as an Emerging Variety

Listeners in the Galician community, regardless of language background, can identify Galician-dominant and Spanish-dominant bilinguals above chance and perform better with the former group. However, they cannot identify the neofalantes' accent. Although there are differences in how individual neofalantes are classified, with some speakers more often classified as Galician-dominant and others more often classified as Spanish-dominant, overall, neofalantes speakers are not only confused with Spanish-dominant but also with Galician-dominant speakers. This result suggests that their accent contains features used by both Galician-dominant and Spanish-dominant speakers. There are also differences in categorization patterns according to listener background; neofalantes listeners show heightened sensitivity to the Galician-dominant variety, in comparison to the other two groups, classifying Galician-dominant speakers more accurately than Spanish-dominant and Galician-dominant listeners. Despite the frequent use of the neofalantes label to designate this social group (O'Rourke and Ramallo 2011, 2015; Ramallo 2013; Tomé Lourido and Evans 2019), the results of this study indicate that Galician listeners are unable to recognise the variety used by neofalantes, that is, they are not able to associate the label with a set of phonetic features, whereas they can do so for Galician-dominant or Spanish-dominant speakers. One possibility is that some participants in the experiment might not have been familiar with the existence of neofalantes as a social group. This study deliberately set out to test the wider community and selected a pool of participants from all backgrounds and professions to investigate whether a neofalantes accent had emerged as a new variety in the community as whole, rather than in only particular areas of society (e.g., those related with language planning and revitalisation or Galician linguistics). However, it seems unlikely that participants did not understand the label, as they were provided with definitions for each group before starting the experiment and the results showed that participants used all three labels. Besides, even though they might not use the label themselves, Galician listeners are often aware that individual speakers may switch language dominance during their lives. In fact, some of the comments they provided

to justify their choice when they identified a speaker as neofalante illustrate this point (participants' quotes were translated by the first author):

[1] *Fala galego habitualmente pero non parece que sempre fora así, como se pensara en castelán.*

[2] *A entoación segue sendo lixeiramente castelá. Tenta falar galego, pero lle queda ese acento castelanfalante.*

[3] *Este chico non falou galego ata que chegou a universidade.*

[4] *Prosodia e pronuncia "aprendida", non soa "natural".*

[5] *Boa fonética, mais penso que adquirida a posteriori.*

[1] '(The speaker) usually speaks Galician, but it doesn't seem like it has always been like this, as if (they) thought in Spanish'

[2] 'The intonation continues to be slightly Spanish. (The speaker) tries to speak Galician, but (they) are left with that Spanish-speaking accent.'

[3] 'This guy didn't speak Galician until he got to university.'

[4] "'Learnt" prosody and pronunciation, it doesn't sound "natural".'

[5] 'Good phonetics, but I think it was acquired a posteriori.'

These comments suggest that listeners were aware that the definition of a neofalante involved a long-term language switch. Therefore, it seems unlikely that the reason why neofalantes were not identified as such was related to not understanding the label.

A question that then arises is in what ways the 'neofalante' label is becoming associated with a particular set of linguistic features. It is possible that listeners have not yet tuned into the phonetic forms produced by neofalantes to be able to link them with the social group to which they belong. However, this interpretation would assume that the changes after the neofalantes' language switch are sufficiently phonetically distinct to constitute an identifiable variety. To evaluate this assumption, it is worth considering that listeners were less accurate in identifying Spanish-dominant than Galician-dominant speakers. Spanish-dominant speakers are not L2 learners and thus, are likely to have a certain type of Galician accent, both in Galician and in Spanish. Therefore, variation due to language background differences could be organised along a continuum with Galician-dominant speakers at one end and L2 Galician speakers at the other end (e.g., a person from Madrid). The accent of Spanish-dominant speakers then, which would fall in the middle of the continuum, but towards the L2 accent side, would not be as distinctive as the Galician-dominant one. Recent work on Galician and Galician Spanish also supports the idea of an existing continuum of varieties, with more traditional Galician varieties, typically produced by rural Galician-dominant speakers at one end and varieties which are more influenced by Spanish, typically produced by urban Spanish-dominant speakers at the other end (e.g., [Regueira 2019](#); [Regueira and Fernández Rei 2020](#)). Regarding variation within Galician-dominant speakers, [Aguete Cajiao \(2019, 2020\)](#) proposes the existence of two models of stressed vowel systems in Galician: a conservative model with seven vowels (see also [de la Fuente Iglesias and Castillejo 2020a, 2020b](#)) and an innovative model with five vowels, as a result of both language internal and language contact factors. The latter model, with merged mid vowel contrasts is associated with urban and semi-urban areas, where Spanish is more widespread ([Aguete Cajiao 2019, 2020](#); [Tomé Lourido and Evans 2019](#); [Mayr et al. 2019](#)), and also with neofalantes and Spanish-dominant speakers ([Amengual and Chamorro 2015](#); [Tomé Lourido and Evans 2019](#); [Regueira 2019](#); [Regueira and Fernández Rei 2020](#)). [Regueira and Fernández Rei \(2020\)](#) examined the stressed and unstressed vowel systems and intonation patterns of six Galician bilingual speakers from different language backgrounds. As well as confirming the patterns found in previous studies for stressed vowels in Galician ([Tomé Lourido and Evans 2019](#); [Aguete Cajiao 2019](#); [Amengual and Chamorro 2015](#)), they found that for unstressed final vowels Galician-dominant, neofalantes and rural Spanish-dominant speakers used reduced vowels, a traditional Galician feature. However, the urban Spanish speaker used an unstressed vowel system that was closer to Castilian Spanish and different from the rest of the participants, providing further support for the existence of a continuum, but also illustrating that individual phonetic variables may behave differently.



The existence of a continuum would also explain why the neofalantes' accent was not accurately identified. These speakers would be situated between Galician-dominant and Spanish-dominant bilingual speakers, and thus, it might not be possible for this accent to emerge as distinctive, due to the degree of overlap with the other two varieties. This idea is similar to explanations of how children develop awareness of regional accent variation. Wagner et al. (2014) argue that children have a gradient representation of accent variation in which the native accent forms the core set of experience and other accents are categorised in relation to that core (see also Evans and Lourido 2019). One possibility is that such gradient representations not only form the basis of adult representations, but that they continue to be used in adulthood. In our case, it is possible that a prototypical Galician-like accent and a prototypical Spanish-like accent function as anchors at both ends of a continuum, and that other language backgrounds are identified relative to these. In fact, some comments that participants made when identifying neofalantes' speakers support this idea:

- |  |   |
|--|---|
| [1] <i>Non vexo claro se é máis galego ou máis castelán.</i>   | [1] 'It is not clear to me if it is more Galician or more Spanish.'   |
| [2] <i>Os enes e a articulación das consoantes son casteláns, pero semella polo ton e as vogais que fala galego normalmente.</i>   | [2] 'The "n"s and the articulation of consonants are Spanish, but in terms of the tone and the vowels, it seems that (the speaker) usually speaks Galician.'  |
| [3] <i>Hai moita variabilidade entre rasgos de pronuncia tipicamente galegos e outros moi alleos.</i>  | [3] 'There is a lot of variability between typically Galician pronunciation features and very alien ones.'  |
| [4] <i>Ten unha mezcla de pronunciacións.</i>  | [4] '(The speaker) has a mixture of pronunciations.'  |
| [5] <i>Ten un amago de sete vogais, pero non tan claras como nos galegofalantes. Transmíteme sensación de inseguridade, como se non soubese exactamente como ten que dicir cada palabra. Podería vir xusto desa condición de neofalante.</i> | [5] '(The speaker) has something like seven vowels, but they are not as clear as those of Galician speakers. It conveys to me a feeling of insecurity, as if (they) didn't know how exactly (they) have to say each word. It could come from precisely that condition of neofalante.' |
| [6] <i>Ten un bo acento galego pero algunhas trazas son do castelán.</i>   | [6] '(The speaker) has a good Galician accent, but some features are Spanish.'  |

These comments also reveal that neofalantes were described as using a mix of features, some of which were identified as Spanish and others which were identified as Galician, indicating that neofalantes use a hybrid variety. Tomé Lourido and Evans (2019) investigated the production of three segmental variables by these three bilingual groups and showed that neofalantes pattern with Spanish-dominant speakers for mid-vowel and fricative contrasts, but with Galician-dominant speakers for reduced word-final vowels. These findings showed that neofalantes did not produce categories that were distinctive from the other two groups. Likewise, the accent identification study showed that neofalantes patterned with both bilingual groups, as they were not only identified as Spanish-dominant but also as Galician-dominant, specifically by Galician-dominant listeners and neofalantes themselves. This is in contrast to impressionistic descriptions of neofalantes' varieties that have suggested that these speakers have a Spanish-accented variety of Galician (Freixeiro Mato 2014; González González 2008; Ramallo 2010) and are speakers of 'New Urban Galician' (*Novo galego urbano*, Dubert García 2002; Regueira 1999a). However, the phonetic variables examined in Tomé Lourido and Evans (2019) represent only a limited number of features—these represent only part of their accent—and it is possible that listeners are sensitive to other segmental or suprasegmental features. In sum, it appears that neofalantes use a mixture of Galician- and Spanish-like variables, including the phonetic features examined in Tomé Lourido and Evans (2019) but that they may also use other variables that have not yet been explored. It is possible then, that listeners in the community are sensitive not only to the Spanish-like variables, but also to the Galician-like features that neofalantes acquire after their switch, and that this leads them to categorise neofalantes speakers as both Spanish- and Galician-dominant speakers.

### 5.2. Accent Identification and Listeners' Language Background

Our second research question examined whether identification ability depended on listeners' language background. Overall, identification accuracy was similar for the three listener groups. These results do not provide full support for the idea that language ability facilitates identification of the speakers' language background (see [Perrachione et al. 2011](#), for effects of language ability on voice identification), as an effect of language ability would predict better performance in Galician-dominant listeners. Although all bilingual groups were familiar with the phonological system of Galician, neofalantes and Spanish-dominant listeners likely perceive the sounds of Galician through their native Spanish categories ([Tomé Lourido and Evans 2019](#); [Iverson et al. 2003](#); [Pallier et al. 1997](#)). [Tomé Lourido and Evans \(2019\)](#) showed that neofalantes and Spanish-dominant listeners' accuracy when identifying the mid-vowel contrasts in minimal pairs in a word identification task was not as good as that of Galician-dominant listeners', who performed at ceiling. Other studies have found similar results when comparing Spanish- and Galician-dominant listeners ([Amengual and Chamorro 2015](#); [Aguete Cajiao 2019](#)). However, many participants from the neofalantes and Spanish-dominant groups claimed to use the mid-vowel contrasts to categorise speakers:

- |   |   |
|---|---|
| [1] Spanish-dominant listener (SD): <i>Boa distinción entre vogais medias abertas e pechadas.</i>   | [1] SD: 'Good distinction between open and close mid vowels.'   |
| [2] SD: <i>Todas as vogais me sonan igual de pechadas. Creo que as non logra diferenciar con facilidade.</i>  | [2] SD: 'All the vowels sound equally close to me. I think (the speaker) can't differentiate them easily.'  |
| [3] Neofalante (NF): <i>Véxolle seguridade na fala e non emprega as vogais abertas, que para min é algo moi característico para saber quen é galego falante e quen non.</i> | [3] NF: 'I see that (the speaker) is confident when speaking and doesn't use the open vowels, which for me is something very characteristic to know who is a Galician speaker and who isn't.' |
| [4] NF: <i>Só lle escoito cinco vogais.</i>   | [4] NF: 'I can only hear five vowels.'  |

One possibility is that listeners believe they use certain phonetic features, such as mid vowels, to classify speakers when they might be, in fact, using different variables. This would imply a mismatch between what they think they use and what they actually use. Mid vowels could be considered a sociolinguistic stereotype, one which forms part of the knowledge of members of the bilingual community, even though it may not conform to an objective fact ([Labov 1972](#)). There is a high degree of awareness among individuals in the community about the fact that one of the differences between Galician and Spanish is the vowel system. This is particularly true for younger listeners, who have been taught the Galician language at school. Besides, there is a widespread belief that a 'good speaker' of Galician must have all seven vowels. This may also be why listeners are able to report specific phonetic features, often vowels, using linguistic terminology in the comments above. However, it seems rather unlikely that Spanish-dominant and neofalantes listeners who were not always able to identify the mid-vowel contrast in a vowel identification task ([Tomé Lourido and Evans 2019](#)) would be able to use this contrast in accent categorisation. It is likely that instead, they use other phonetic features, such as unstressed word-final vowels, a feature that has been claimed to be easily perceptible and distinctive ([Regueira 2012](#)), but that they believe they use mid vowels. Indeed, there were remarkably fewer comments highlighting the influence of word-final vowels in participants' decisions, and those comments were expressed in less explicit ways. For example, in comments (1) and (2) the participants represent in spelling the reduction of unstressed word-final vowels by writing 'norti' instead of *norte*, 'mailu' instead of *mailo*, and 'du' instead of *do*. In comment (3) the listener refers to this feature by saying that the final vowel is almost not pronounced.

- |   |  |
|---|--|
| <p>[1] <i>Clarísima galego polo acento. O vento do 'norti' e 'mailu' sol ...</i></p> <p>[2] <i>A contracción 'do' pronúnciaa como unha persoa que fala en galego normalmente. Case pronuncia 'du'.</i></p> <p>[3] <i>Casi no pronuncia la &lt;-e&gt; final.</i></p> | <p>[1] 'Clearly Galician because of the accent. O vento do "norti" e "mailu" sol ... '</p> <p>[2] '(The speaker) pronounces "do" like a person who usually speaks Galician. (They) almost pronounce "du".'</p> <p>[3] '(The speaker) almost doesn't pronounce the final &lt;-e&gt;.'</p> |
|---|--|

Listeners also made references to other segmental features such as the pronunciation of /l/, /s/ and /ɲ/ and liaison processes, e.g., 'era o' [l<sup>1</sup>εrɔ] and 'máis o' as [l<sup>1</sup>majlo\_](transcription of individual words follows the transcription system proposed in Regueira's *Diccionario de pronuncia da lingua galega* (Regueira 2010)). The phonemes /l/ and /s/ exist in both languages, but the realisation of the /s/ has been found to be different for Galician-dominant and Spanish-dominant speakers (Tomé Lourido and Evans 2019). Additionally, there is individual and regional variation in the realisation of /s/ in Galician (Regueira and Ginzo 2018; Regueira 2014; Labraña Barrero 2009, 2014). In contrast, the phoneme /ɲ/ and the liaison processes that occur in the sentence are characteristic of Galician and do not exist in Spanish (see Fernández Rei 2005; Regueira et al. 1998; for vowel elision in Galician). Suprasegmental features, such as rhythm, intonation and prosody, which are typically different in both languages, were consistently mentioned (see Fernández Rei 2005, 2016; Fernández Rei et al. 2014; for Galician prosody).

Assuming that a similar mechanism underlies voice and accent identification skills, the result that all listener groups showed a similar level of accuracy in identifying talkers supports an account in which familiarity with a phonological system, rather than more robust phonological representations, facilitates talker identification (Fleming et al. 2014; Goggin et al. 1991; Thompson 1987). In this context, all three listener groups live in a bilingual community where they have everyday exposure to all the accents. These findings are in line with other work in the area of voice identification. Bregman and Creel (2014) showed that listeners learnt to recognise talkers faster in their L1 than in their L2, but that early bilinguals learnt voices equally quickly in both of their languages. They suggest that one way to account for the difference between early and late learners is that languages or cultures differ in terms of the features that are used to differentiate between talkers. As they acquire the sound inventory of their L2, early bilinguals, unlike late learners, are also thought to acquire the 'talker-varying characteristics unique to a particular culture' (Bregman and Creel 2014, p. 94). In the case of Galician bilinguals, it is possible that from an early age, they gain sensitivity to the phonetic cues that help to identify the speaker's language background and that's why no overall difference in accuracy was found between the three groups. Clopper and Pisoni (2004, 2006) found that performance in accent categorisation tasks appears to be modulated by participants' background: listeners who had lived in different areas performed better than those who had only lived in one area and, additionally, listeners who lived in a particular region performed better with the accent from that region. The authors proposed that greater exposure to linguistic variation and specific experience with one variety benefits accent categorisation. The results of the current study do not contradict Clopper and Pisoni's findings. All listeners had been exposed to all the accents presented here, at least to Galician-dominant and Spanish-dominant varieties. and although listeners did not show an advantage for their own accent, this may be because of their frequent exposure to all accents. This is similar to findings in other bilingual contexts (Mayr et al. 2020; Tan 2012). Mayr et al. (2020) found that monolingual and bilingual listeners in Wales were able to identify whether a person was able to speak Welsh based on their accent in English. The accuracy rate in their study was similar to that for Galician- and Spanish-dominant speakers in our study; above chance, but not exceptional. Likewise, although the listener groups in both studies are not fully comparable, they also found no difference in performance between their English monolingual and Welsh-English bilingual listener groups. Note that the sociolinguistic situation in Wales and Galicia is different in this regard, as it would be rare to find monolingual speakers of Galician or Spanish born

and raised in Galicia within the age range tested (18–54 years old), at least at the time when the study was carried out; this may change in the future.

However, identification accuracy was not exactly the same for all listener groups; neofalantes showed heightened sensitivity to one of the accents, the Galician-dominant variety. This could be due to neofalantes' increased metalinguistic awareness about Galician. Neofalantes are typically very aware of the way they speak and the fact that their accent is different from that of Galician-dominant speakers. They are usually very motivated to learn Galician and invest time and effort in doing so. O'Rourke and Ramallo (2013b, 2015) argue that neofalantes have a heightened sense of awareness about their own sociolinguistic reality and the sociolinguistic context in Galicia. Taking all these factors into consideration, it seems reasonable to hypothesise that neofalantes would be more sensitive to phonetic features in the Galician variety, as that is likely the model most of them follow after they switch languages. In sociolinguistics, listeners' sensitivity to a particular phonetic cue or awareness of a sociolinguistic variable has been related to the concept of 'salience' (Drager and Kirtley 2016; Jaeger and Weatherholtz 2016; Montgomery and Moore 2018; Nycz 2016; Rącz 2013). Jaeger and Weatherholtz (2016) distinguish between the 'initial salience' of a novel feature a listener experiences for the first time and salience at a later stage, i.e., the cumulative exposure the individual has had to the variant. A feature is perceived to have initial salience when it is unexpected in relation to the listener's previous language experience and, therefore, varies between individuals and communities. One could hypothesise that neofalantes were more sensitive to Galician-specific features because these were not part of their phonetic repertoire, or at least not before the language dominance switch.

Previous work has also shown that associations between phonetic variables and social meanings may not be the same for all listeners in the community. Eckert (2008) argues that variables do not have fixed and static meanings, but instead that they acquire that meaning in a particular context. Identifying Galician-dominant speakers or monitoring their speech might not be so important for Spanish-dominant listeners or Galician-dominant listeners themselves, whilst it might be particularly relevant for neofalantes. This explanation is consistent with Evans and Lourido (2019) findings for monolingual and bilingual children in London; bilinguals were able to differentiate talkers with a foreign, regional and their home accents, whilst monolinguals were only able to differentiate the foreign accent from their own. Like the bilingual children, it is possible that neofalantes develop and then benefit from the accent identification skills needed to navigate the relationships within their community. One important caveat is that the listener groups were not balanced for sample size. Whilst there were 58 Galician-dominant and 61 Spanish-dominant listeners, there were only 13 neofalantes, due to the difficulties in recruiting this group of bilinguals (Tomé Lourido and Evans 2019, p. 645). One possibility is that this result is due to variability in the neofalantes group, and replication of this effect is thus needed to ensure its validity.

## 6. Conclusions

In sum, this study showed that although neofalantes are a distinct social group that acquire and use both their languages in a different way to Galician- and Spanish-dominant bilinguals, the emergence of this profile of speakers has not led to the creation of a distinct neofalantes variety (see also Nance et al. 2016) that is recognised by Galician listeners. Instead, listeners categorise neofalantes as both Spanish- and Galician-dominant, supporting findings from production studies that show that neofalantes use a variety containing a mix of Spanish and Galician features (Tomé Lourido and Evans 2019; Regueira and Fernández Rei 2020). One possibility is that listeners have a gradient representation of variation, with Galician-like accents and Spanish-like accents functioning as anchors and the neofalantes' accent situated somewhere in the middle. There was also evidence to support the view that familiarity with a phonological system, rather than more robust phonological representations, benefits accent identification; the overall identification accuracy was similar

for bilinguals from the three language backgrounds, suggesting that the three groups are sensitive to the phonetic cues that are used to identify the background of a speaker in a community and likely acquire them early in life. However, the differences in the patterns of identification indicate that listeners did not weigh phonetic features in the same way. These findings suggest that representations of accent variation vary according to language background and provides further evidence that the evaluation of phonetic features not only varies as a function of context, but also depends on the social and language experience of the individual.

**Supplementary Materials:** The following are available online at <https://osf.io/4nwpv>, Dataset.

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## Appendix A. Materials related to the Procedure in Galician

Definitions:

- Normalmente fala galego: Esta persoa fala galego no seu día a día e sempre falou máis galego que castelán.
- Normalmente fala castelán: Esta persoa fala castelán no seu día a día e sempre falou máis castelán que galego.
- E neofalante: Esta persoa sempre falaba máis castelán, pero agora fala galego no seu día a día.

A que grupo pertence este falante?

normalmente fala galego

normalmente fala castelán

é neofalante

Seguinte

Por que cres que esta persoa normalmente fala castelán?

Dá unha resposta tan específica como che sexa posible. Por exemplo, hai algún son ou palabra en particular que che faga pensar que este falante normalmente fala castelán? Non tes por que utilizar linguaxe técnica e non te preocupes por como o explicas. Simplemente utiliza a tua intuición.

Se queres, podes volver escoitar o audio.

▶

Cofieces a esta persoa?

Non Si

Seguinte

**Figure A1.** Representation of the procedure. First, participants identified to which group they thought the speaker belonged. Then, they provided comments about what influenced their decision. They also indicated whether they thought they knew the speaker.

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