Article

The Infrequently Sung ‘ⲁ’ Instead of ‘Ⲁ’ in ‘Alleluia’ According to the Coptic Tradition

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Submitted: 11 October 2021, accepted: 22 November 2021, published: 30 November 2021

Abstract: We attempted to study the hitherto unexplained phenomenon of the sung “ⲁ”, for one note, at the end of an “Ⲁ” melody. We encountered this issue during singing the word “Alleluia” in the Coptic musical culture. We found that the transmission from “Ⲁ” to “ⲁ” serves as an intermediary step before continuing to the “L”. It may also be an adopted habit by some singers, rather than a consistently inherited musical design with a clear pattern. However, further research is encouraged to decipher this phenomenon.

How to cite: Henein, M.Y.; Azer, S.S.; Khirey, J.; Pahor, A.L.; Isshak, N.S. The Infrequently Sung ‘ⲁ’ Instead of ‘Ⲁ’ in ‘Alleluia’ According to the Coptic Tradition. *TEACH J. Christ. Stud.*, 2021, 1(1): 2; doi:10.35995/teach-jcs1010002.

Background and Objective

Singing, irrespective of its origin, is based on the use of the vowel sounds in all the different languages. Currently, the Coptic language is the existing active form of the Ancient Egyptian language, which was used centuries before Christ [1]. The Coptic language remains alive particularly in the Coptic Orthodox Church, since most liturgical hymns, chants and praises are composed on lyrics written in the Coptic language [2]. The Coptic vowels (which amount to eight in number whether individual or combined letters) are particularly rich, covering a broad spectrum of phonetic expression sounds. These specific sounds give the melodies a special dimension when experienced singers/chanters move smoothly from one vowel to the other.

The letter Alpha ‘Ⲁ—A’ is a special vowel which is frequently used in Coptic singing with several variations. The most common word in which the letter ‘Ⲁ’ is sung, is ‘Ⲁⲗⲗⲏⲗⲟⲩⲓⲁ - Alleluia’ which means ‘praise God’. While ‘Alleluia’ could be syllabically chanted, it could also be the seat of very long melismatic chanting that may last for several minutes. A good example of the latter is the “ⲡⲉⲕⲑ̀ⲣⲟⲛⲟⲥ - pek-ethronos” hymn which is sung during the Great Good Friday and more recently on Tuesday of the Holy Week. The vowel ‘Ⲁ’ of ‘Alleluia’ may also be melismatically chanted at varying lengths in many other hymns.

It has been observed that cantors and choirs tend to abruptly change the pronunciation of the letter ‘Ⲁ’ from the British sound, the ‘stressed a’ (ɑ:) (referred to as ‘Ⲁ-**A**’ in this article) to the American sound, the

unstressed a (**ə**) (referred to as '**ⲁ-a**' in this article) as in the obvious difference in pronunciation between the words *"ask"* and *"answer"* in both accents. This phenomenon typically occurs during melismatic singing of the word 'Alleluia' just before pronouncing the letter '**L**' in some hymns as well as some short liturgical responses. This observation created a sense of curiosity, as to what is the reason behind that abrupt change in pronunciation! Such behaviour is not usually heard with any of the other vowels, albeit they may very well be pronounced in a particular way influenced by what the cantor is comfortable with or is used to. However, the vowel sound does not abruptly change at the end of its singing from one accent to the other, as is the case with '**ϫ**' and '**ⲁ**'.

The objective of this study was to identify potential patterns of singing the vowel '**ϫ**' in a sample of hymns/responses practiced in the Coptic Orthodox Church, particularly those in which the '**ϫ**' is changed into '**ⲁ**', based on the recordings of the Institute of Coptic Studies [3], and comparing them with the pattern of singing other vowels.

Study Design, Methods and Results

The first author (MH) raised the above issue with the three co-authors (NI, AP and SA) who constitute the Coptic Language Committee of the European Academy of Coptic Heritage—TEACH [4] and requested a satisfactory linguistic explanation. After some fair discussions, no conclusion was reached. All members continued to search the subject from different angles and bounce ideas and thoughts at each other. MH searched the above linguistic patterns in five hymns with various lengths of the '**ϫ**' sound and observed that irrespective of the length of the '**ϫ**' sound, the change to '**ⲁ**' lasts only for one musical note before the letter '**L**' is pronounced. He then requested AP, being a Throat Medical Consultant, provide a comparative analysis of the muscular tension generated in and around the mouth when singing '**ϫ**' and '**ⲁ**' and also compare both with that of the '**L**'. Moreover, in order to obtain accurate count of the music notes sung in each letter, MH asked JK, a renowned Coptic musician, to notate the five hymns to compare their singing patterns (Figures 1–5).

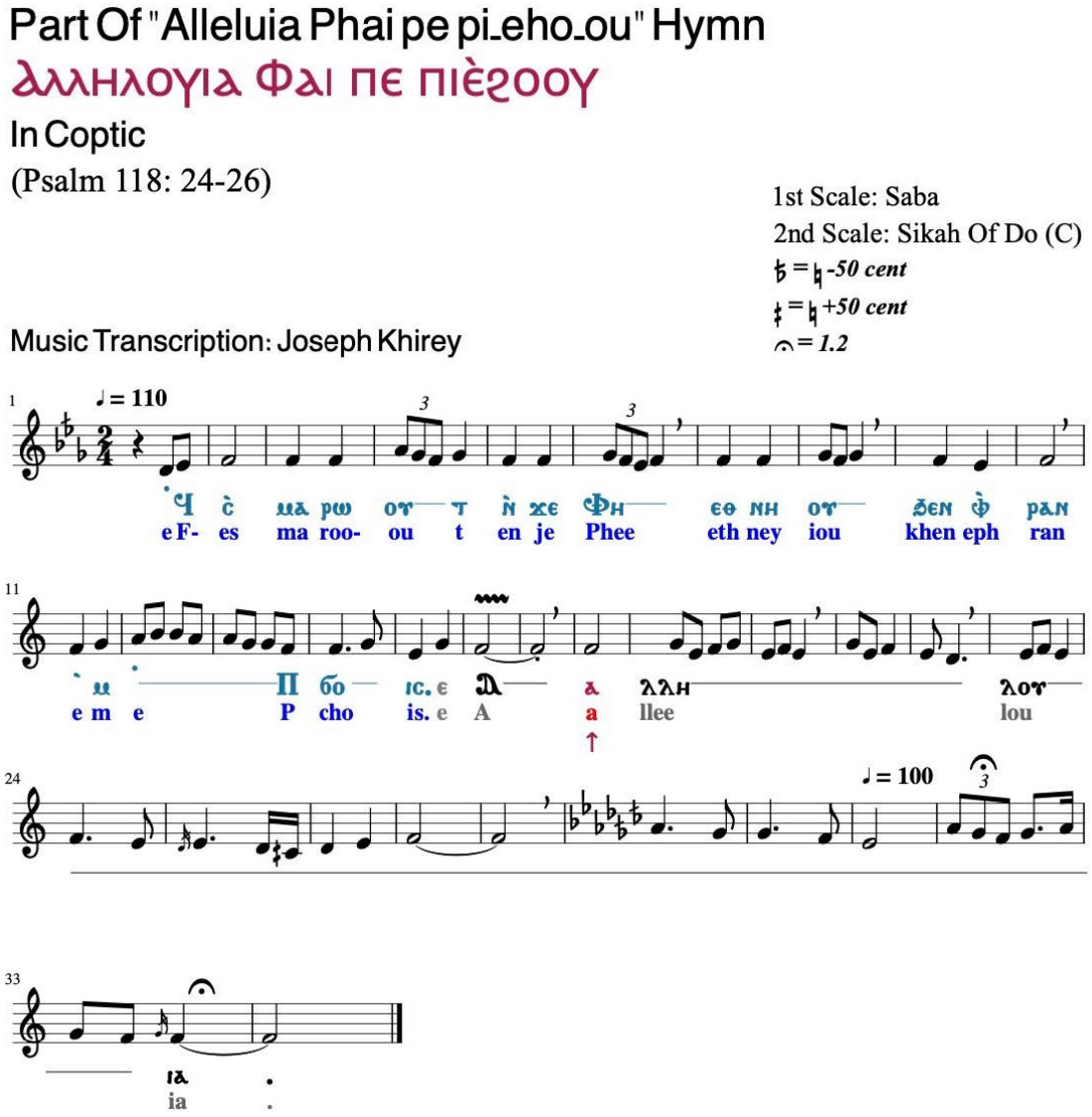

Figure 1: Music notation of Alleluia Phaipe_pi_eho_ou showing the 'ⲁ -a' note in red (arrow).

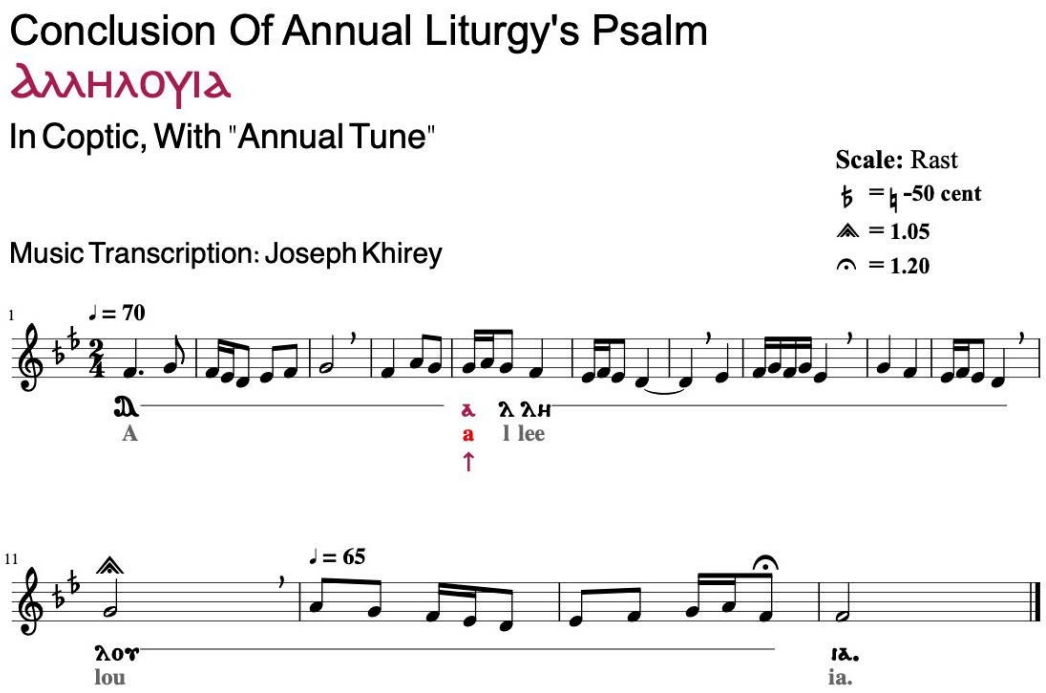

Figure 2: Music notation of the annual liturgy psalm showing the '**ⲁ** -a' note in red (arrow).

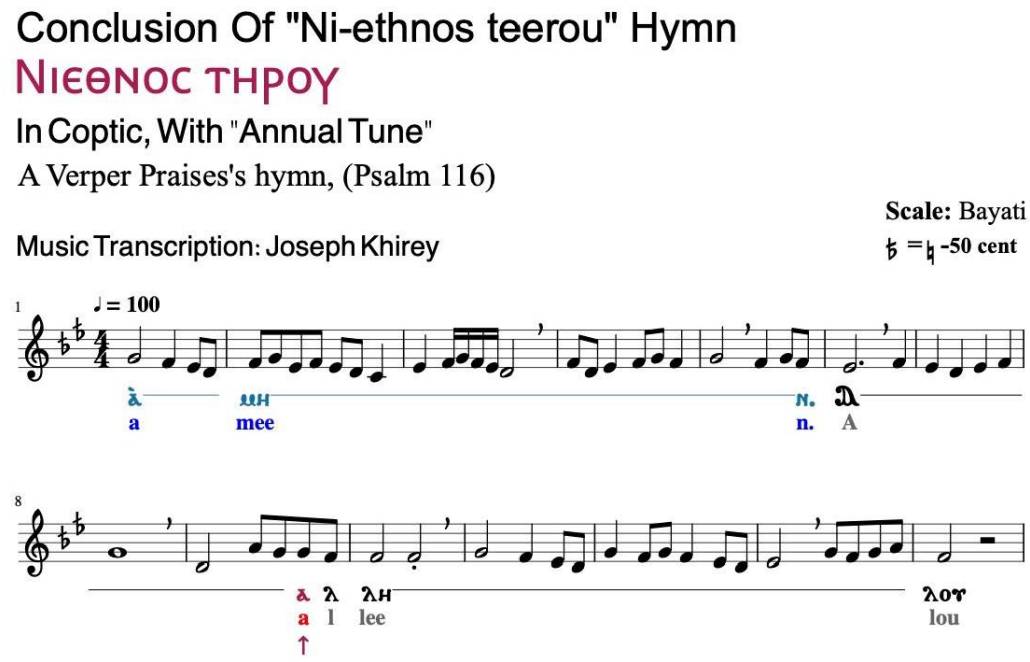

Figure 3: Music notation of Ni-ethnos teerou showing the '**ⲁ** -a' note in red (arrow).

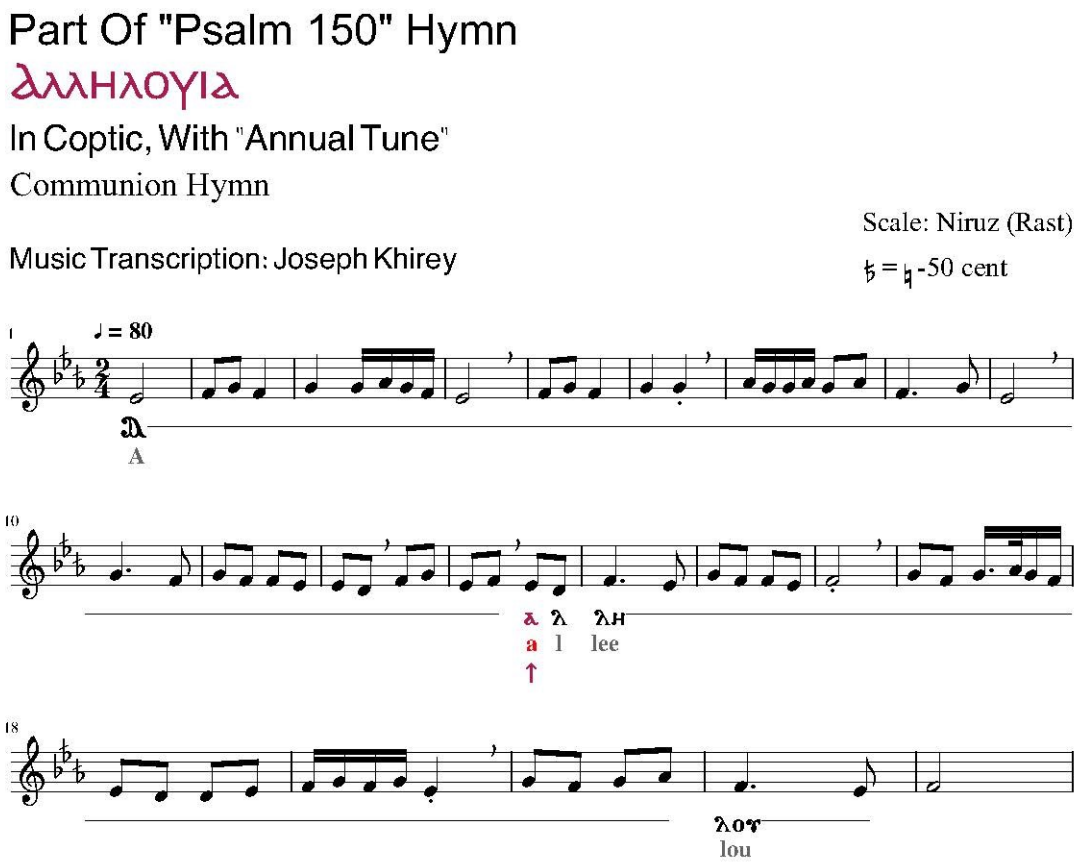

Figure 4: Music notation of Alleluia Psalm 150 hymn showing the 'ⲁ -a' note in red (arrow).

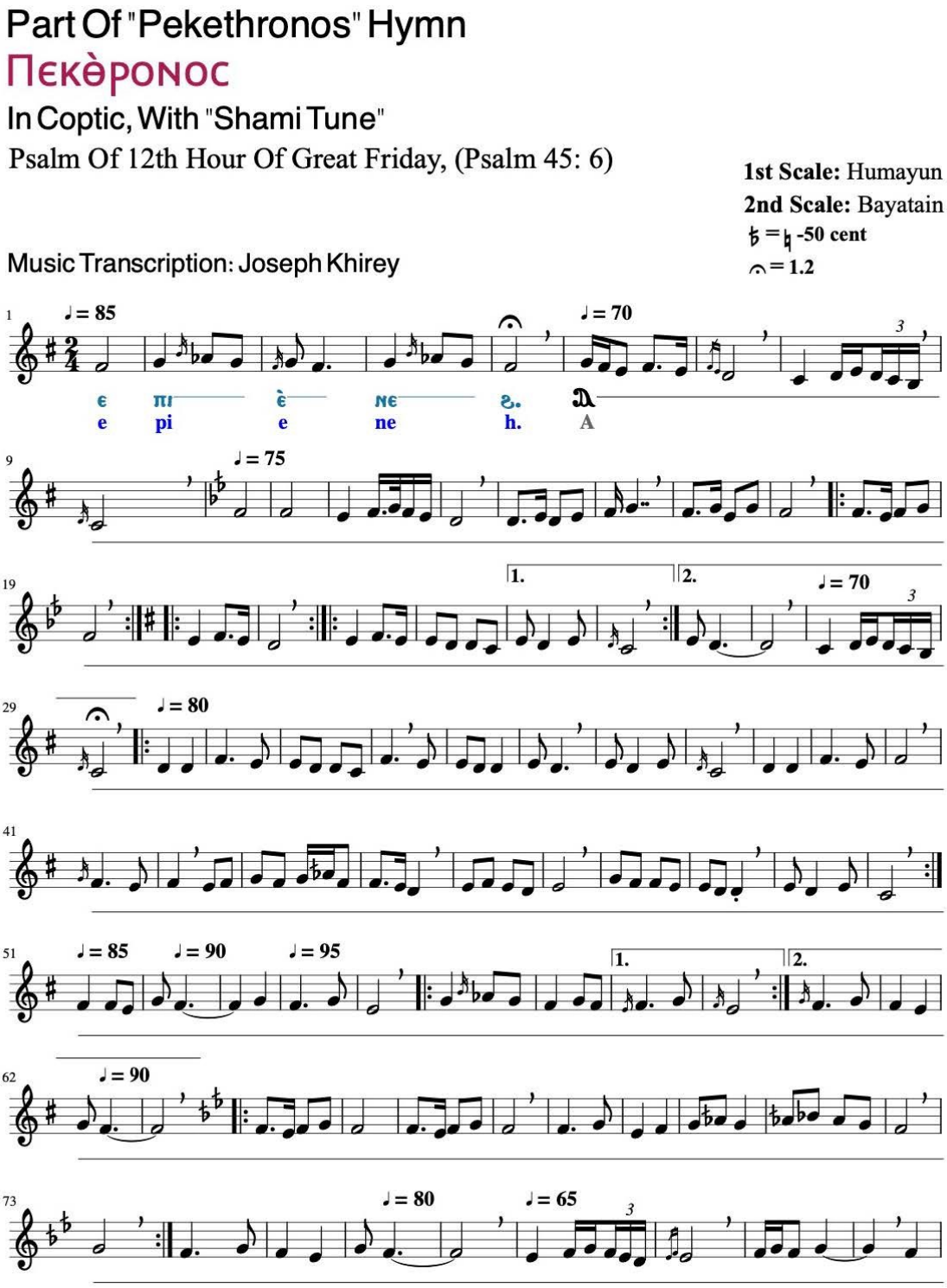

Figure 5: *Cont.*

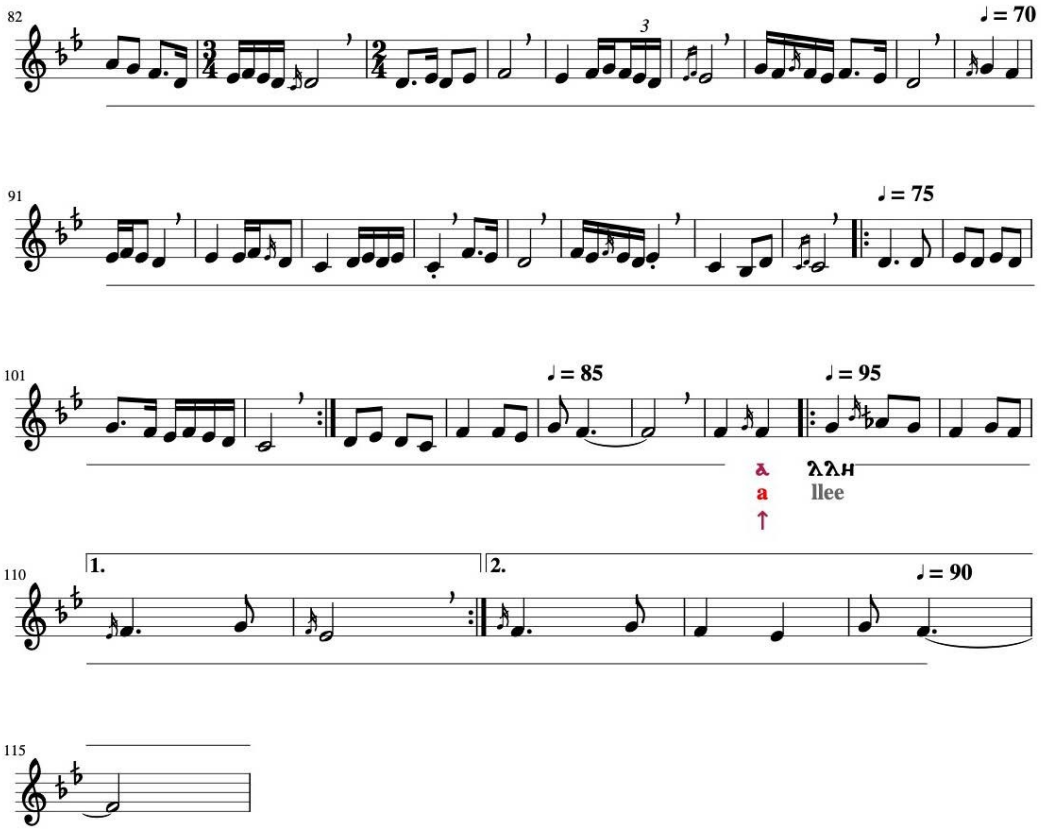

Figure 5: Music notation of Pekethronos hymn showing the '**ⲁ** -a' note in red (arrow).

The length of the '**Ⲗ**' varied in different hymns. It was only 2 notes in *"Alleluia Phaipe_pi_eho_ou"*, 8 notes in the *"Alleluia Psalm Response"*, 15 notes in *"Ni-ethnos Teerou"*, 25 notes in the *"Annual Psalm 150"* and 203 notes in *"Pekethronos"*. Despite these significant variations between the hymns, the striking finding was that the length of the '**ⲁ**' sound was only one musical note in all of them, occurring just before pronouncing the letter '**L**'.

The second observation was the attempt to find any potential relationship between the number of notes of the '**Ⲗ**' and the number of notes of the vowel '**H - eita**' following the '**L**', which could assist in explaining such phenomenon. To answer this question, all '**H**' musical notes of the five hymns were manually counted and placed in the same spread-sheet next to the '**Ⲗ**'. The relationship between the numbers of '**Ⲗ**' and '**H**' in the five individual hymns was tested using a simple correlation test applying the Pearson correlation method. This test showed a very close relationship between the number of the '**Ⲗ**' and the number of the '**H**', with an r value of 0.99 and p value <0.001 (Figure 6).

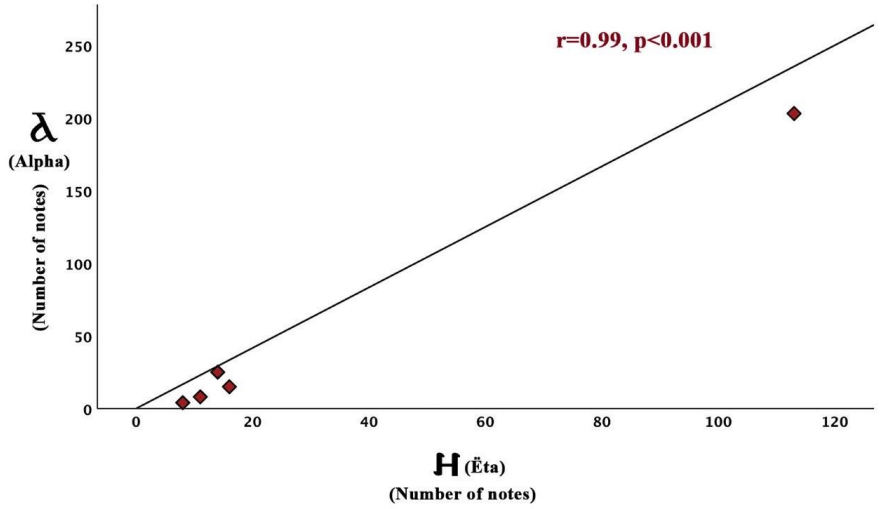

Figure 6: Correlation between the number of notes of the letter 'ⲁ' and the letter **Ⲏ** in the 5 studies hymns.

Discussion

Findings: The change from 'ⲁ' to 'ⲁ' in the word "Alleluia" in some Coptic hymns is a unique finding, since in other hymns it does not happen. Furthermore, the same singing observation does not exist in any other culture, whether Mediterranean or Western, which poses an interesting question that deserves careful investigation. Hence, the objective of this paper was justified. Thus, our observation seems to be unique only to some of the Coptic hymns independent of their length, with some shifting from 'ⲁ' to 'ⲁ' only after 2 notes and in others after 203 notes. This finding is striking since it does not exist in other music, when choirs sing the vowel 'ⲁ' melismatically for a few minutes without a need to shift to 'ⲁ', as is the case with "Alleluia Chorus" in Handel's Messiah.

In this study, we also attempted to explain this observation on the basis of anatomical changes in mouth and tongue muscular tension during singing of 'ⲁ' and 'ⲁ'. Indeed, it seems that 'ⲁ' is associated with less muscle tension compared with the former, hence the 'ⲁ' could be described as a bridging sound before the '**L**' when the tongue touches the palate. Sound bridging is a very well-known phenomenon in the world of music, but only produced instrumentally, rather than orally. Another potential explanation for the shift from 'ⲁ' to 'ⲁ' could be the length of '**Ⲏ**' melody after the '**L**'. Once again, this also varies significantly between the different chants but is closely correlated with the number of 'ⲁ' notes we studied in the five hymns. This finding suggests a unique pattern of composition but does not answer the pronunciation shift we investigated but deserves an independent detailed study.

To better understand the mechanism of individual vowel sound production, one should review the anatomy and physiology of the organs contributing to the vocal production in some detail. The lungs act like a bellow through the muscular actions of the diaphragm, the chest and the abdominal muscles, forcing the air through the vocal cords. The vibrations of the vocal cords break into the column of air and modulate the air flow producing a voiced sound. This sound, in turn, is selectively modified by the upper respiratory tract and the mouth into a recognisable voice. The nasal sinuses and the pharynx are the main resonating chambers. The lips, tongue and teeth work in unison to produce the speech. The lips' position and movements affect the vowel sounds. The tongue controls how much air comes out.

In view of the above physiology, we would like to propose the following explanation for the pronunciation shift we are reporting. The transition from 'ⲁ' to the softer 'ⲁ', in some hymns renders it smoother to the chanter to continue with the forthcoming '**L**' sound. With the 'ⲁ' sound, the mouth is in the open position, the tongue is distant from the palate and the muscles of the tongue and jaw are tensed and contracted in order to maintain this open position. The lips are also apart, in contrast to being round. On the other hand, with the 'ⲁ' sound, the

tongue and lips are in a comparable but less pronounced position, thus with less muscle action. With the sound '**L**', the tip of the tongue touches the alveolar ridge (at the front of the hard palate). To produce a clear '**L**' sound, a smooth transition, even for only one note could be a comfortable bridging technique since the '**L**' sound is not sung and does not need the wide mouth opening with a dropped mandible while singing '**ⲗ**'. This is achieved with the '**ⲁ**' sound transition, which gives a similar note to the '**ⲗ**', though much softer. This change allows the said muscles to begin to relax. Add to this that for the '**L**' sound to be produced, the tongue needs to curl upwards. A tongue in a high position could move further forward than one in a lowered position [5]. Hence, this smooth intermediary transition with '**ⲁ**' helps to achieve this aim. However, such mechanism does not explain why the pronunciation shift does not exist in all Coptic 'Alleluia' irrespective of their singing duration.

Literature evidence: Coptic, in its different dialects, has been a well-established living language of Egyptians for nearly a thousand years. During that period of active use, and the following seven to eight hundred years of decline and cessation except for church use, its pronunciation underwent modifications. This is expected considering the space of many centuries through internal changes and under the influence of Greek, first, and Arabic, later. While non-Egyptian Coptologists consider Coptic to have ended as a living language between the tenth and thirteenth century [6], most Egyptian Coptologists believe it continued to be spoken in some locations in Upper Egypt until, and as late as, the seventeenth century [7]. Nevertheless, both groups agree that no researcher has ever witnessed a living Copt speak the language and recorded him/her despite some unsubstantiated claims [8]. At long last, a Coptic revival movement took place in the middle of the 19th Century led by Pope Cyril IV (1854–1861) through the efforts of Mu'allem Aryan Girgis Moftaḫ (1826–1888) [9]. This endeavour needed a unified standardised pronunciation for church prayers and, simultaneously, for the benefit of those who liked to speak the language for everyday affairs. In consultation with many Greek linguists, Aryan Moftaḫ compared the value of Greek letter roots as likely sounded and used in the Greek church of his time, with that of Copto-Greek words used in the Coptic church [10]. His statement about the pronunciation of '**ⲁ**', '**ⲉ**', '**ⲓ**', and '**ⲏ**' vowels was as follows [11]:

'*Rectifying Greek words introduced in our church service in accordance with their original sound values necessitated referring to grammar books of Greek language. It became, then, obvious their sounds were exactly like those in the Coptic language*; the '**ⲁ**' sounds *open* مفتوح and *long*, the '**ⲉ**' sounds between the *open* alpha and *kasra* كَسْرة, the '**ⲓ**' as short *kasra,* and the '**ⲏ**' has the value of two '**ⲓ**'.

Moftaḫ, also stressed on: '*Egyptians borrowed the Greek figure of alpha to replace the equivalent Egyptian alpha figure*, *and it is impossible for 'ⲉ' to replace* '**ⲁ**' [12]. H. Satzinger, much later, spoke of the coalescence of these two vowels, attested as early as the mid seventeenth century, and recognised it was only in the modern reformed pronunciation '**ⲁ**' and '**ⲉ**' became distinguished as **[*a*]** الف and **[ɛ]** ياء, respectively [13].

Moftah furthermore highlighted the misinterpretation that could happen if distinction between the sounds of '**ⲁ**' and '**ⲉ**' is not made. This could result in confusing the meaning of **ⲉⲑⲟⲩⲁⲃ** with **ⲁⲑⲟⲩⲁⲃ**, for ***holy*** and ***unholy,*** and **ⲉⲧⲁⲓⲏⲟⲩⲧ** with **ⲁⲧⲧⲁⲓⲏⲟⲩⲧ**, for ***honoured*** and ***unhonoured,*** respectively.

It is clear from this and other references that a single sound value was given to each vowel, and the '**ⲁ**' was compared to the Arabic ***alef*** "الِف" [14–16]. The established ***modern standardised pronunciation***, also known as *reformed*, *Church*, *Greco-Bohairic*, and *Cyrillic* became, since being introduced 160 years ago, the official ecclesiastical pronunciation [17]. Despite the defined sound of '**ⲁ**', and of '**ⲉ**', akin to that given by known Western scholars [18], so much variation takes place in current church prayers. It is common, for example, to give letter '**ⲉ**', and even *'***ⲱ***'*, the sound of '**ⲁ**', e.g., **asashoapi** for **aes-ae-shoapi** (**ⲉⲥⲉ̀ⲯⲱⲡⲓ**) and ***kaerya*** for **kiryae** (**ⲕⲩⲣⲓⲉ**), and **oo-a-oo** for **ⲟⲟ-ⲟⲁ-ⲟⲟ** (**ⲟⲩⲱ̀ⲟⲩ**). This deviation from the standardised modern pronunciation can be explained by more than one factor, most of all lack of knowledge and enthusiasm of many of those leading the prayers in the Coptic Church.

Differences in vowel pronunciation also exist between nations. The first audio recording for human voice was made in the USA in the year 1860. The spoken American English sounded very different from the British English of the first settlers who colonised the first permanent settlement at Jamestown, Virginia in 1607 [19]. One major difference that has evolved over the centuries between the two accents, is 'rhotacism'. The American accent is referred to as being rhotic, whereby speakers pronounce the 'r' sound as in the word "hard." The British accent, on the other hand, is considered non-rhotic, whereby speakers do not pronounce the 'r' and so the same word would be pronounced as "hahd." With the same notion, the letter "**A**" follows similar pattern between

those two accents of the English language; the same word would be pronounced with clear difference in sound. A classic example is what was mentioned above regarding the verbs 'ask' and 'answer' when pronounced in both accents. The British would say the '**A**' sound and the Americans would say the '**a**' sound for the same very word. Nevertheless, it is almost impossible to mix between the two pronunciations (British and American) in the same word when the letter is present twice. It is either one or the other. This phenomenon is not generally followed in the contemporary Coptic pronunciation, whereby one may find both pronunciations '**A**' and '**a**' in the same word or phrase. This is evident in the word 'Alleluia' which is the subject of this study, as well as the phrase "ⲡⲓ̀ⲡⲛⲉⲩⲙⲁ ⲉⲑⲟⲩⲁⲃ" meaning the Holy Spirit, where the first word ends with '**A**' and the second word ends with '**a**'. This differentiation is critical as it may have opposing meanings if the vowel sound is not clearly or correctly pronounced, as noted above in the words ⲉⲑⲟⲩⲁⲃ and ⲁⲑⲟⲩⲁⲃ.

Thus, in view of this complex mechanism for producing the two sounds, we hereby propose some potential explanation for the transition from '𐌀' to 'ⲁ' in "Alleluia". **Firstly,** the transition from '𐌀' to 'ⲁ' renders it smoother to continue and follow along with the '**L**' sound, based on the above physiological explanation. **Secondly**, the 'ⲁ' smoothens the sound and the muscle tension before the double '**L**' in "Alleluia" according to the Coptic tradition of singing as compared to other Western choirs who sing it as a single '**L**' without a need to transform the '𐌀' to 'ⲁ'. **Thirdly,** the transition might represent an oral bridging voice that smoothens the singing sound to the ears of the listeners, as musicians commonly do when they introduce an additional bridging note that does not exist in the original song that is being chanted. However, the three explanations still do not explain the lack of uniformity of this pronunciation shift in all sung 'Alleluia' according to the Coptic tradition.

In conclusion, we attempted to study the hitherto unexplained phenomenon of the sung "ⲁ", for one note, at the end of an "𐌀" melody. We encountered this issue during singing the word "Alleluia" in the Coptic musical culture. We found that the transmission from "𐌀" to "ⲁ" serves as an intermediary step before continuing to the "L". It may also very well be an adopted habit by some singers, rather than a consistently inherited musical design with a clear pattern. However, further research is encouraged to decipher this phenomenon.

Conflicts of Interest: The authors have no conflict of interest to declare. The authors also agree to abide by the requirements of the 'Statement of publishing ethics of the TEACH-Journal of Christian Studies (JCS)' [20].

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