

**DIGITAL ORCHESTRATION VIS-À-VIS LIVE SYMPHONIC ACCOMPANIMENT:
AN ETHNOGRAPHY WITH A CONTEMPORARY ENSEMBLE: EVERGREEN CHORALE,
ONITSHA**

Jude Orakwe (jatomaria@gmail.com)

Stella Nwobu (nadistel@yahoo.com)

Kenechukwu F. Onuorah (kf.onuorah@coou.edu.ng)

Chukwuemeka Odumegwu Ojukwu University,
Anambra State, Nigeria

Abstract

The tendency in the traditional world of classical music is to wish away the existence, importance and relevance of digital instrumentation. It is believed and even argued that genuine classical music must be played live, on real instruments like acoustic piano, wind-blown pipe organ, strings, wind and percussive instruments. Otherwise, it becomes a grossly unreal and inauthentic representation. At the 2006 colloquium of the International Association of Sacred Music, it was generally agreed by members during a musicological deliberation that the artificially contrived sound of an electronic organ is unworthy of the temple. The present essay, based on live and participant observation, is geared towards exploring the tenability, or otherwise, of such position, given the level of sophistication and verisimilitude that has been achieved in the contemporary manufacture of electronic instruments, especially the digital piano keyboard. The inquiry builds on the authors' experience with the Evergreen Chorale, an elite choral ensemble operating in Omagba area of Onitsha. Fact is, the dexterous use of digital orchestration in the performances of the Evergreen Chorale is such that a blind person listening would fail to distinguish the digital sound of orchestration registered into the keyboard workstation from the sound of a real live orchestra. This brings forward the exigency of phenomenologically questioning previous assumptions and prejudices concerning digital instrumentation. Hence, if the essence of music—the intangible food of the soul—is to bring joy to the human soul, then, the argument that the sound of electronic keyboard or digital orchestration is inauthentic needs revision, given that the manipulation of such keyboards and the orchestration that comes with it also requires some digital skills that must be declared valid science in their own right.

Keywords: Evergreen Chorale, classical music, digital orchestration, electronic keyboard, symphony orchestra

Preamble

During a class on Musical Systems of Meanings at the Indiana University in 2010, one of the authors got into an argument with one of his professors on the authenticity, or otherwise, of the Hammond Organ as a church musical instrument. In insisting—rather adamantly—that the Hammond is an instrument that generates its sound by an unnatural, that is, electronic means, and therefore does not qualify as an authentic musical instrument, he was simply parroting an argument heard during one of the sessions of the 2006 colloquium of the International Association of Sacred Music (*Consociatio Internationalis Musicae Sacrae*) at the Pontifical Institute of Sacred Music, Rome. A similar argument was also heard by the authors during the Campus Classical Competition involving some Nigerian Universities, held at Awka, Anambra State, 7-8 December, 2019. One of the judges at the competition, a professor of music therapy, indicated, rather strongly, that the electronic keyboard is a non-classical musical instrument. About a year before that, precisely in 2018, a fiery controversy was sparked by the decision of the authorities of St. Peter's Basilica, Rome to install a digital organ in the basilica. Offended by such audacious but “awkward” effort at digital music update, the Italian Association of Organ Builders argued that such digital instrument “awkwardly tries to imitate the sonority of the real instrument without, however, succeeding in any way.” Standing on such negative judgment, the Association asked the entire world of culture “to express its regret for the presence of the surrogate of an authentic instrument within the most important home of Catholicism” (Catholic Herald Staff Writers, 2018). In all, the commonality of all the arguments against electro-digital instrumentation is that for a genuine classical music to exist, its instrumentation must be natural, based as it were, on acoustic and non-electronic instruments.

Nevertheless, the assumptions and position of the traditionalist acoustic-instrumental camp, well intended, as it is, seem to be challenged strongly by the current advancement in the world of digital instrumental music technology. Digital instrumentation has attained such great advancement and sophistication—thanks to the present scenario in which “machine learning has become a significant aspect of music production” especially given “the rise of digital technology and reliance on Artificial Intelligence (AI) in Digital Audio Workstations (DAWs)” (McCray2023). Such digital instrumentation or virtual orchestration can be developed in a DAW of an electronic keyboard “using virtual instruments... by working extensively on a piece's instrumental playback,

pacing, and spatial properties” (Kramer 2021). Indeed, with such contemporary sound technology, it has become so difficult to discern the real and radical difference between naturally and electronically generated sound, the later, often marked by “undefiled sound quality” and “a high level of audio clarity and balance” (Onuorah 2024, p. 3) with the listener believing that he or she “is hearing a live orchestral performance” (Kramer 2021).



Fig. 1: Franklin Onuorah, Founder of Evergreen Chorale

It must however be stated that the foregoing is achievable only because the human person behind the manipulation of the digital sound is in essence the primary agent of transforming the generation of sounds into audible and pleasant music. In other words, “the transformation of [the digital music sound] to a finished product [is] based on the creative ingenuity of the musician [that] makes it an art” (Aibuedefe & Okeke 2019, p. 34). Before proceeding in discussing the (un)tenability of the traditionalist insistence on acoustic instrumentation for authentic music production, it would be necessary to give a historical outline of ethnographic experiences of the authors with regard to live performances of the Evergreen Chorale.

Historico-ethnographic Data

The Evergreen Chorale is a multi-part choral group founded or instituted by Ekene Franklin Onuorah, a first-class music graduate of Nnamdi Azikiwe University, Awka. One can follow the chorale’s activities via its Facebook page (cf. <https://m.facebook.com/evergreenchorale1/>) as well as its YouTube channel (cf. <https://youtube.com/@evergreenchorale1?si=6GfG5PPLgHTXsXhc>). The choir is well known for its highly rated appearance cum performance at public functions like funerals, weddings, other special liturgical services and many public concerts. The immediate occasion giving rise to the present inquiry stems from live experiences of concerts by the chorale on December 12, 2023, and then on 9th and 16th of May 2024. The Christmas concert of December 12 was organized by the Calvary Chapel of the Bishop’s Court and has as chief guest, the Bishop of the Diocese on the Niger, Rt. Rev. Dr. Owen Nwokolo and his wife Dr. Mrs. Elsie Nwokolo. It was an evening event featuring various shades of popular carols as well as pieces of classical music. In all there were ten traditional carols including the piece, *Once in Royal David’s City*, serving as a processional overture. Then there were the following: *See Amid the Winter’s Snow* (by Sir John Goss), *O Come O Come Emmanuel* (as adapted by Thomas Helmore), *Hark the Herald* (Mendelssohn), and *Silent Night* (by Franz Gruber). Featuring were also well-known carols like the *Adeste Fideles*, *O Little Town of Bethlehem*, and *While Shepherds Watched their Flock*. The rendition of the carols was followed up by the performance of many classical anthems drawn from composers of various epochs of music history. There were selections from George Handel’s *Te Deum*, *Messiah*, *Solomon* as well as two pieces (*Awake the Harp*, *Sing the Lord ye voices*) from Franz J. Haydn’s *Creation*. The concert wrapped up the blissful night with the performance of *Hallelujah Chorus* from the *Messiah* after a scripture reading from the book of Isaiah 9:2-8 by the bishop’s wife and a heart reaching Christmas message by the Bishop, Rt. Rev. Owen Nwokolo. Most of the classical pieces rendered during the 12th December, 2023 concert were reiterated during a concert performance led by the director of Evergreen Chorale in the context of an internal post-graduate examination of the music department of Chukwuemeka Odumegwu Ojukwu University, Igbariam Anambra State on 9th and 16th of May 2024 and were witnessed by authors of the present essay.

As already mentioned above, the Evergreen Chorale was founded by Franklin Onuorah about eight or nine years ago. According to a communication from him, membership of the Chorale is drawn from the crème de la crème of the cantors of St. Mark’s Anglican Church Omagba, Onitsha. The chorale is basically a semi-professional

choir and performs for an agreed – or perhaps, a specified – fee. Because of the professionalism attached to the choir, individuals or organizations intending to hire the chorale are usually aware that the charged fee is assessed from the purview of professional performance. In spite of the financial stakes involved, the chorale is in very high demand in and around the Southeastern zone of Nigeria, especially in Anambra State. All participating members of the chorale are usually remunerated after each performance and this – according to the founder – becomes a way of letting them benefit from their professional output which they had volunteered to the church freely and without pay. According to a former member of the chorale, the rehearsal regimen of Evergreen is strict, tight and characterized by strong choral discipline that could only result in the high standard of choral performance.



Fig. 2: Members of Evergreen Chorale in Picture Pose

Performance Practice of the Evergreens vis-à-vis Digital Accompaniment

The virtuosic performance of Evergreen Chorale is strongly based, aided and amplified by a constant use of digital music equipment. First off, there is the use of extremely high-quality microphones. Then, the founder is an avid student of complex digital sound programming, involving the use of digital or/and para-digital sound mixers, sound amplifiers and loudspeakers who strongly believes that understanding the workings of the sound mixing console and even the appropriate and apposite placement of speakers is central to an optimum sound output and enhanced music performance (cf. Dase, Igbi & Igbi 2019, pp. 72-73). From observation, Onuorah is not just a sound engineer at the level of merely adjusting knobs and buttons on the sound console but seem to possess a sophisticated mastery of the skill of balancing sound amplitude and frequencies. By reckoning of the authors, he is endowed with a refined and rarefied knowledge of the art of sound aesthetics and acoustics.

But what gives the Evergreen its unique patent sound is the use of orchestral accompaniment “worked-out” on the workstation of a higher grade of electronic music keyboard. This unique sound is achieved by exploring the multiple and versatile sonic possibilities inbuilt and inherent in the digital instrument. Such possibilities include part balancing which can be worked out on the mixing console, where decisions could be made on “how all the orchestra[l] instruments should be heard” by appropriately adjusting “the volume of each musical instrument that form the [virtual] orchestra at large” (Onuorah 2024, p. 5). Then, there is also the possible option of panning the sound output, a process by which the sound signal is spread “into a new stereo or multichannel sound field, typically giving the impression that it is moving across the sound stage” (Offline Dictionary of English). Onuorah explains further that when a choral accompaniment is being created, studio effects such as compression, reverb, equalizer, and volume control play crucial roles. Compression helps maintain consistent dynamics, while reverb adds depth and ambience, making the accompaniment sound as if it were performed in a real acoustic space. The equalizer assigns various frequencies to all the instruments in the sequence, while the volume control ensures a perfect blend between all the instruments in the orchestra. Now, these features are all readily available in the keyboard workstation’s music editing console.

The significance of the above exposition is to indicate that the setting aside of a live symphony orchestra in lieu of digital sound production as typically practiced by the Evergreen Chorale is pure art and science in its own right. According to Kramer (2021) digital sound production “is an art form that requires musicality, creativity and an incredible amount of work” for a successful output. Kramer (2021) further argues about the exigency of developing “virtual orchestration as an independent art form by developing an aesthetic that is proper and unique to it.” In saying this, it must be borne in mind that the emergence of digital orchestration stands as a unique innovation in regard to music production.

The use of prearranged and prerecorded virtual orchestration for accompaniment of a choir is a new technique that could boost the performance of classical music in third world countries where perennial financial encumbrances make the prospect of having a full funding for live orchestral concert performance, as yet, seem a mirage. It would therefore be fairly rigid and, perhaps, unscientific to quickly dismiss such advancement and enhancement of knowledge as regards digital sound production as a lazy man’s approach to music making or a tinkering with what is not a real sound. Rather, it must be seen for what it is—namely—an innovation that could even constitute a course in the higher study of music. At this juncture, however, it would be opportune to examine the pros and cons of digital orchestration, as obtainable in Evergreen Chorale. Let us begin first with the cons.

Demerits of Virtual Orchestration

A first argument against virtual orchestration as practiced by Evergreen Chorale is the problem of interruption of the programmed orchestration. In a developing country like Nigeria, this kind of problem is not farfetched and can result from non-infrequent power outage, frequency distortion, transmission interruption, other forms of technical glitch. The authors had a first-hand experience of this problem during one of the Christmas concerts of the Music Department of Chukwuemeka Odumegwu Ojukwu University, Anambra State. Because of electric power surge and sudden high load of voltage, the plugging unit of the digital keyboard got damaged with the result that the prerecorded accompaniment was temporarily inaccessible and could not be used. Nevertheless, the accompanist had to advert to normal manual accompaniment. Therefore, while opting for a prerecorded accompaniment, it is important that anticipatory safeguards be made to avoid such power interruptions and alternative arrangements be put in place.

Another problem associated with prerecorded digital accompaniment is the absence of a psychoacoustic connection between the virtual orchestral accompaniment and the audience (cf. Schneider & Emery 2024). Odiase and Asomdwee (2014, p. 70) see this lack in terms of the absence of “sense of humanity ... that digital recordings [or orchestration], may not achieve.” This is so because the virtual orchestra while remaining “in the shadow of the real orchestra... lacks what gives the real orchestra life” (Kramer 2021). On the contrary, live orchestral performances with concrete—and even symbolic—musical instruments have a special capacity to convey energy and stir emotions while forging an instant and intimate bonding between the musicians and the audience. Besides, the artistic exuberance that live performers bring to the stage can be an incredible source of powerful inspiration. In fairness to Evergreen, though, this lacuna is bridged by an extraordinary passion and energy that exude from the live song performances of the ensemble.

Next is the dimension of nonverbal communication which is an inextricable aspect of choral-orchestral performance. A live orchestral accompaniment, which is an added plus to this dimension of performance (that is, nonverbal communication), is obviously absent in Evergreen because of the use of virtual instrumentation. According to Schneider and Emery (2024), when musicians play together, they engage in nonverbal interaction and react to each other’s cues, creating a sense of collaboration, unity, a shared experience that is hard to replicate with digital sounds. The interaction between an orchestra and a choir under the ‘mesmerizing’ and ‘choreographed’ directional swing of the conductor’s baton is certainly one of the attractions of a choral concert. This interaction is hard to create with a virtual orchestra—as obtains in the performance of Evergreen chorale—because of the normative advertence to digital instrumentation nor is it possible to fill up the gap with only choral rendition. Moreover, the synchrony of cues between the human voices and the instrumentalists is absent because the accompaniment is machine-generated.

There is also the problem of absence of rich shades and hues of sound. Although there are presently some highly sophisticated digital instruments that can produce apparently refined musical sound, yet digital orchestration is often deficient in that high—if not elusive—display of skill and rich sonority that is producible only at the level of live performance. For example, such sonic nuance is very conspicuous in the sound production of string instruments inasmuch as “stringed instruments possess more ways of producing sound than any other orchestral group” (Rimsky-Korsakow 1912, p. 8). But in the performance of Evergreen Chorale, a prerecording of the string sound from the digital keyboard will encounter difficulty in reproducing sounds of “species of bowing

such as legato, detached, staccato, spiccato, portamento, martellato, light staccato, saltando, attack at the nut and at the point... down bow and up bow, in every degree of tone, fortissimo, pianissimo, crescendo, diminuendo, sforzando, morendo” (Rimsky-Korsakow 1912, p. 8), assuming that these subtleties are indicated in the orchestral score.

Advantages of Digital Orchestration

While, on the one hand, there are arguments that can be put forward in opposition of the use of digital orchestration as operant in the Evergreen Chorale, there are, on the other hand, even more propositions elucidating the advantages of such virtual electronic-orchestral accompaniment. These advantages include—but are not limited to—regularity, affordability, availability, and adjustability of the accompaniment. There is also the advantage of enhancement of rehearsal as well as the music educational advantage of such accompaniments (OpenAI, 2024).



Fig. 3: Evergreen Chorale in Concert Performance With regard to the regularity of digital accompaniment, this must be understood from the perspective of providing “a consistent accompaniment every time, [while] eliminating variations that might occur with a live accompanist” (OpenAI, 2024). According to Onuorah (2024, p. 3), “recorded orchestral accompaniment provides and ensures consistent timing, tempo, dynamics, and predictable performance... every time it is played.” As such, “musicians can rehearse and synchronize their performance precisely with the recorded music, ensuring a high level of accuracy...” A close analysis of the rehearsal and performance practices of the Evergreen Chorale shows that the choir is given to a high level of consistency as regards both dynamics and tempo. This is attributable to the regularity of prompts emanating from its use of virtual accompaniment.

Next is the cost-effective and sempiternal accessibility of digital orchestration. On this, Onuorah (2024) avers that prerecorded digital accompaniment:

offers the possibility of incorporating complex orchestrations, electronic sounds, or other production elements that may enhance the overall performance [and] enables performers to use music recorded by professional musicians or orchestras that may not be readily available or affordable [in] a live performance (p. 4).

The availability and affordability of prerecorded electronic orchestral accompaniment mean that the members of Evergreen Chorale can always have their choir rehearsal at choice time and venue irrespective of availability or none of a pianist or organist. From a close observation of the Evergreen by the authors, it became obvious that the ever-readiness and the ever-handiness of prerecorded accompaniment guarantee an all-time seamless and freely flowing rehearsal and performance for the choir.

Further, there is this adjustability that attaches to the use of prerecorded virtual orchestration for accompanying classical choral performances. The authors of the present essay noted this capacity for flexible adjustment in the performance of the Evergreen Chorale. Such flexibility equates to a mechanism by which “virtual accompaniments can be easily adjusted to match the choir's needs, including tempo changes, key transpositions, and dynamic alterations, helping singers to practice at their own pace” (OpenAI, 2024). In concurrence to the above definition, Onuorah (2024) indicates:

Recorded accompaniment offers flexibility in adapting the musical arrangement to suit the specific needs of a performance. It allows performers to easily edit or modify sections of the accompaniment, transpose the key, or adjust the tempo to accommodate the preferences or limitations of the performers or the overall production (p. 4).

This is why one of the Evergreen members—who may not even be a keyboardist—would normally stay at the keyboard to manipulate the console buttons as they relate to needed adjustments in tempo and dynamics, in the course of the performance, instead of the digital instrument being left unattended to unwind on its own.

Finally, it is important to mention the gain of accumulating an ampler or enlarged body of repertoire effected by the advertence to prerecorded accompaniment. Lamm (2017) sees this as “one of the best ways to help [a] choir or vocal team be successful with their music...” For him, choirs can “attain a higher level of excellence” with capacity of faster memorization of music and broadening of “their music and style repertoire” when prerecorded tracks are made available for both rehearsal and performance. On a prompt, the ChatGPT app reveals that “virtual orchestration can simulate a full orchestra, giving choirs the ability to perform pieces that would typically require more instrumentalists than they might have access to, **thus expanding their repertoire options**” (OpenAI, 2024, emphasis mine). From the practical experience of the present authors, a major factor impacting adversely on the fast growth of choral ensembles in the Southeastern part of Nigeria is the absence of good and reliable accompaniment. But with prerecorded accompaniment, choirs are able to make a successful headway into certain difficult classical pieces they would not have been able to perform previously. One of the authors had a lived experience of this situation in conducting a pre-performance rehearsal of an amateur choir singing the piece, *Zadok the Priest*, from Handel’s Coronation Anthems, unaccompanied. At some point, the performance of the piece was cancelled because of the difficulty being experienced by the choir in handling the intricacies of the music. Eventually, when a prerecorded accompaniment for the song became available, the piece was performed with great success. The Evergreen is one such choir that practically coasts from victory to victory, conquering so many difficult choral pieces with such an admirable ease because of its frequent use of prerecorded orchestrated digital accompaniment.

Conclusion

Overall and by way of synthesis, the present essay argues strongly that the pros of digital orchestration far outweigh any demerit that can be pointed out in opposition of such usage. The reason for this stand has to do with the exigency of promoting music education and the performance of classical music by any legitimate means. This is exactly the aim of the Evergreen Chorale. The use of digital instrumentation should never be seen as a direct or indirect way of lowering the standard of music performance. Indeed, this essay recommends that choral or musical ensembles—in and around the Southeastern Nigeria—copy the example of the Evergreen Chorale for the advancement of music knowledge and awareness among choristers as well as for amplification of their parameters of performance. As already hinted above, universities in Nigeria would do well to incorporate digital instrumentation—and especially digital orchestration—in their curriculum.

From the mien and tenor of this exposition, it is logically tenable to insist that advertence to virtual accompaniment of choral performance is a legitimate science in its own right. By way of induction, it can be argued that just as it serves as for the advancement of the quality of choral performance, it can also cohabit with the effort to promote the learning of—and live performance with—many natural and acoustic instruments of the orchestra. In other words, the gains of digital/virtual instrumentation and the merits of performance with live acoustic instruments are not mutually exclusive but can be made mutually supportive and promotive of each other. In third world countries like Nigeria, such mutual support and promotion can lead to expansion of the learning and more frequent use of live instruments. This can be achieved when—for example—prerecorded accompaniments become the promotive basis and a psychological encouragement for performance of solo pieces like concertos for the various musical instruments, including the acoustic piano and pipe organ.

References

- Aibuede, E. F. & Okeke, B. L. (2019). Sound production, propagation and utilization: A quintessence of the scientific and artistic nature of music. *Journal of the Association of Nigerian Musicologists (JANIM)*, 13, 30-37.
- Dase, E., Igbi, E. & Igbi, O. (2019). The science and art in composing and performing Nigerian art music. *Journal of the Association of Nigerian Musicologists (JANIM)*, 13, 67-76.
- McCray, N. (2023). *The future of music production: Virtual instruments and AI*. <https://www.jonystudios.com/blog/the-future-of-music-production>. Accessed May 25, 2024.
- Kramer, E. (2021). *Exploring the virtual orchestra through blood, sweat and tears: Creating a virtual orchestration from a pre-existing score*. <https://timbreandorchestration.org>. Accessed August 9, 2024.

- Lamm, K. (2017). *Creating practice tracks for your choir or vocal teams*. <https://www.renewingworshipnc.org/producing-practice-tracks/>. Accessed August 18, 2024.
- Odiase, Y. & Asomdwee, W. (2024). Influence of digital economy on vocal music performance of Christian musicians in Nigeria. *Journal of the Association of Nigerian Musicologists (JANIM)*, 18, 65-70.
- Onuorah, F. K. (2024). *The benefits derived from the use of a keyboard workstation in providing orchestral accompaniment to a live choral performance* (Unpublished Essay).
- OpenAI. (2024). Disadvantage of singing to the accompaniment of a virtual orchestra. *ChatGPT*. <https://chat.openai.com/chat>
- OpenAI. (2024). Virtual orchestration benefit. *ChatGPT*. <https://chat.openai.com/chat>
- Rimsky-Korsakow, N. (1912). *Principles of orchestration: With musical examples drawn from his own works*, ed. by M. Steinberg, trans. by E. Agate. New York: E. F. Kalmus Orchestra Scores, Inc.
- Schneider M. & Emery R. (2024). *Why orchestral meditation music is better than digital?* <https://orchestralmeditations.com>. Accessed August 9, 2024.
- Staff Writers (2018). Uproar over digital organ in St. Peter's Basilica. *Catholic Herald*, Jan. 18, 2018. www.catholicherald.co.uk.
- Vocapture. *Offline Dictionary of English*. 2.2 Version. com.google.android.tts