

Saxophone Rendition of John Coltrane's "Giant Steps": The Evolution of Tenor Sax Recordings Since 1960s

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Abstract: The study critically examines the tenor saxophone evolution in the recordings and performances through Coltrane's "Giant Steps" works since 1960s. Primarily, the study seeks to answer the question, how have contemporary artists in the post-1960's era responded to the originally complex "Giant Steps" through changes in the harmonic design, interpretive styles and expressivity as culture, and technology continue to influence artistry. The current study adopts a mixed methods of research, combining quantitative and qualitative analysis. Notably, the study employs Sonic Visualizer to extract quantitative data using tempo graphs and spectrograms. The intended data includes tempo present in the Beats per Minute, phrasing length and harmonic placement. More so, qualitative analysis will be done to identify rubato usage and expressivity of the recordings and performances across periods ranging 1960s to present. To achieve this, a sample of six Giant Steps recordings from each era will be used to represent each period and the varying interpretive stylistic approaches by each artist. Research findings reveal that, contemporary jazz saxophone performances and recordings have largely shifted from Coltrane's "Giant Steps" fast and rigid composition to more versatile and slower performances. This has ushered a new era for artists to enjoy more expressivity, harmonic diversity and use of longer phrases in their recordings amid growing cultural influence. This new era signals a shift from technical mastery under Coltrane's works, into more expressive, accessible and narrative performances and recordings. In summation, the study illustrates the changes in Giant Steps interpretation from an arduous harmonic challenge to a creative and more expressive artistry that accommodates both less-skilled and proficiently skilled artist.

Keywords: John Coltrane; Giant Steps; Tenor Saxophone; Jazz Improvisation; Performance Analysis

1. Introduction

Jazz performers and musicians can use melodic sounds to communicate complex emotions and ideas to the audiences. This is achieved through skill and musical proficiency that allows them to transcend beyond the written compositions and integrate musical instruments into their works. More often, their efforts give the audiences a memorable listening experience that resonates with the culture and preference. Central to this, is the art of improvisation that facilitates artists to use melodic and rhythmic progressions as a demonstration of their power to transform written compositions to artistic works while reflecting the prevailing cultural dynamics. For this, transitioning from rigid tenor phrasing bebop standards to free jazz experimentations presents the varying ways to interpret performances under different cultural contexts and eras. Thus this study aims to discuss the evolution of post-1959 Jazz improvisations, particularly the Giant Steps by Coltrane's performance recordings.

The study will therefore will explore the evolution of tenor saxophone interpretations by comparatively analyzing the original Giant Steps against six other selected post 1959 compositions and recordings. The study analysis will explicitly focus on comparing the tempo variations, phrasing lengths and harmonic navigations in each jazz era in post 1960's to present. This will be achieved by employing both quantitative and qualitative methods using Sonic Visualizer to identify and trace the changing patterns in jazz recordings and performances across periods between 1960s to present, while presenting the interpretation frameworks used in performance practices in the same era.

The harmonic design adopted in the original Giant Steps remains central in Jazz studies and performances. At its epicenter, the technical complexity and novel structure underscores Coltrane's creativity and skills mastery. It is not only a sophisticated harmonic design but also creation that proves

intense and lyrical to the audience, often appealing as a piece that demonstrates artist's jazz mastery in the 20th century. *Giant Steps* is characterized by rapid chord progression also referred to as Coltrane's Changes. They occur as quick shifts and symmetrical progression across three major keys as inspired by *Thesaurus of Scales and Melodic Patterns* by Nicolas Slonimsky [1], to yield into the new age IC4 harmonic cycles. The harmonic complexity was designed with high pace, and pattern improvisation, and was a challenge to even the most experienced musicians such as Pianist Tommy Flanagan in the 1959 recording sessions. Porter [2] notes that Coltrane mixed bebop language with new modal ideas resulting in a style that sounded to be well constructed and very spontaneously expressive. For this reason, the release of the album was an artistic breakthrough for jazz enthusiasts sparking continued debate on innovation versus accessibility in jazz music. This required the redefinition of revolutionary change concept in recording of this piece before moving to the later interpretations. Figure 1 presents the harmonic structure that underpins this cyclical design.



Figure 1: Harmonic structure of John Coltrane's "*Giant Steps*" [3].

Overtime scholars have attempted to elaborate how interpretation in jazz has changed rather than just merely repeating previous performances. They typically pay attention to changes as a demonstration the alteration of musical values and styles such as tempo, harmonic replacement or tone. This helps performers to develop knowledgeable interpretations while enabling educators to contextualize the performances from a historical angle. For example, the tenor saxophone has a broad spectrum of expressions traceable in Coltrane's early works through acute tone and strong improvisation. This approach was critiqued to be unbending and rigid but later embraced as innovative and groundbreaking.

This essay therefore extends jazz quantitative research beyond the typical analysis relating to transcriptions of solos [4], where the empirical methods will be used to analyze the differences between the current post-1960s interpretations. Central to the current analysis is the complex harmonic navigations that prove instrumental in assessing the changes in interpretations where artists like Rahsaan combine fusion and avant-garde elements to pursue expressivity. Despite the fact that these approaches disclose valuable patterns, they are less successful when implemented to individual performances outside a broader context. This constraint guides the methodological approach that was adopted in this research essay.

2. Literature Review

Adaptive reinterpretation is a dynamic process of jazz improvisation in the contemporary society. Typically, artists use their skills to extend their works beyond the original compositions. Thus introducing individualized styles to not only reflect their skill endowment but also mirror the cultural influence in their works. This is robustly exemplified in *Giant Steps* renditions where post-Coltrane artist's move to more avant-garde styles, deviating from the rigid linear and chord based bop compositions in Coltrane's original works. In essence, artists in the post-Coltrane era had the chance to explore wider harmonic designs, shorter, slower and simpler rhythms in their recordings and performances. According to Ingham [5] jazz saxophone performances and recordings are historically designed as flexible to allow expressivity and creativity. Relatedly, Yanow [6] underscores the role of contemporary social change in the transition from rigid bebop composition and performances to modern day post-bebop experimentations among modern artists. According to Yasuhiro [7] exploration of Coltrane's early works in 1950s, Coltrane provided a foundation where technical complexity and spiritual elements could be integrated to build *Giant Steps*. For this, problem arises in that, while creativity was

nurtured in the modern artistic improvisation, the 20th Century artists could have been more expressive amid the growing cultural pressures and shifts. As such, this new era signals a moment when there is a need to strike a balance to accommodate creativity, innovativeness and the changing cultural dynamics in the society and jazz. This generates the conceptual framework where Giant Steps changing interpretations and renditions can be examined through artist's cultural lenses and improvisations.

The original Giant Steps by Coltrane's was recorded in 1959, appealing as a major milestone in the 20th Century tenor saxophone performances. In its composition the Giant Steps integrates complex and fast harmonic progressions and improvisations that necessitated technique expansion of contemporary jazz music performance. Notably, Porter [2], records Coltrane's complex composition of the Giant Steps was largely influence by Slonimsky's [1] patterns. From this Giant Steps fast tempo and chord progressions are deemed to be drawn as well as the symmetrical changes in the three primary tonal centers. With this, jazz was not only into a new era but also artistically complex especially for new players. This is evidenced by its complex and strenuous nature to most artists, including Coltrane's team during recording. Nonetheless, due to mastery, the final recording was beyond influential but appealing as lyrical and clear. According to Kahn [8] it is through Coltrane's rigorous practice that he mastered the fast and complex chord progressions, yielding to recording that articulated lyrical flow and clarity. According to Bair [9], Slonimsky cycling motifs largely featured the composition of melodic vocabulary in the Giant Steps. Pellegrin [10], views the composition as a fractal, with repetitive cycles at various levels of the improvisation. Combined, these views demonstrate that Coltrane blended the hard bop rhythmic precision with the new elements in jazz. This success provided a permanent pattern of technical and expressive growth, which would be faced by the saxophonist if the styles and aesthetical priorities kept evolving into more complex levels.

The tenor saxophonists in the post 1960s era marked a progressive shift in style towards hybridization in their interpretation of Giant Steps. In this new age, saxophonists combined free jazz, fusion, and international influences, which was beyond the hard bop paradigm introduced by Coltrane. According to Giddins and DeVaux [11], the evolution into free jazz in 1960s changed the focus from harmonic adherence to expressivity, spirituality and sound texture. For example, musicians such as Pharaoh Sanders preferred free-flowing improvisation to harmonic adherence dominating the tenor saxophonists in the Giant Steps era. Notably, Litweiler [12] highlights the increased freedom in post-1959 era where artists like Rahsaan Roland Kirk renditions demonstrated an infused extension of techniques and elements of playfulness. Later on David Murray provided an avant-garde dissonance of the 1980s as a representation of evolving freedom in rendition and composition. Ratliff [13] traces Coltrane's legacy into fusion era of 1990s-2000s. During this period, artists such as Michael Brecker would blended the harmonic navigation in 'Coltrane change' with modern tools of electrified rock rhythms dominating the music industry at the time. Contemporary interpretations analyzed by Tackley et al. [14] are restrained versions by Mark Turner in the 2010s, which focus on the subtle modals amid the growing globalization of jazz community and genre. Collectively, these periodic developments demonstrate the departure from replication and reproduction to the creative reinvention of Jazz in the contemporary society. This trend is a response to evolving technologies and cultural diversity as well as the uncovering the shortcomings of systematic audio comparison, which this project aims to fill.

The 20th century scholarly debates relating to Giant Steps revolve around the dual contrasting role it plays in the jazz industry. On one side, it is viewed as technical challenge to artists while the other side, the work is viewed as a ground breaking masterpiece of the time. This contrasting enquiry triggers a debate questioning the jazz genre accessibility and the composition complexity of its performance. According to Waters [3] the complex interval 4 (IC4) structure adopted in Giant steps presents some level of technical complexity for artists often deterring less proficient artists. Typically, this level of complexity often is presented as a litmus test to demonstrate skill mastery Yasuhiro [7] notes that Giant Steps embodies Coltrane's abstractive approach to artistry that perpetrates artistic inaccessibility as it may alter artists melodic intent and expressivity through the fast harmonic design and motion. Notably, Coltrane's work is critiqued from a spiritual conquest angle. In this, Giant Steps is pursued as either audience alienating or extended elevation of Jazz's philosophical belief. From this, Tackley et al. [14] denotes Giant Steps sophisticated nature as one that perpetrates the marginalization of jazz traditions, positioning his reverence as contradictory. Collectively, these two viewpoints show a conflict between the rigorous interpretation of Coltrane vision and the more adaptive interpretations as influenced by individualistic cultural aspects in post-1960s.

3. Research Gap

The available literature on Coltrane and the evolution of jazz offers a powerful base of empirical quantitative approach for analysis. At its foundation, literature reveals gaps in comparative research of tenor saxophone interpretations that need technological devices to be measured correctly. Thomas [15] uses qualitative descriptions of the innovative techniques in Coltrane mystique. Relatedly, White [16] provides a personal and theoretical understanding of the music played by Coltrane. Cook and Alfonso [17] analyze the metaphorical meanings of the titles of the compositions by Coltrane and relate them to the general interpretive concepts. This essay extends previous quantitative research techniques to a jazz saxophone setting. For example, models expressiveness could be measured based on the dynamic range in classical and rock music. These approaches inform the study of tempo change and harmonic deviation in Giant Steps performances overtime in the contemporary jazz saxophone performances. This underscores the limited evidence-based studies on post-1960s interpretations of Coltrane's works as tenor saxophone evolved through the years into the contemporary society.

4. Methodology

Current essay adopts mixed methods to investigate the changes in the interpretation of the Giant Steps by tenor saxophone players since the 1960s. The research is based on quantifiable parameters, such as tempo variation, phrasing duration, and harmonic variation. It builds on the approaches of performance research, based on quantitative studies by Geringer [18] of dynamic range and with previous empirical findings of expressive similarities. Spectrograms and tempo maps created by audio analysis software such as Sonic Visualizer will be used to compare recordings with extreme accuracy.

The sample size is composed of the recording of six tenor saxophonists who played after 1960. Thus, the sample is purposively chosen according to the artistic prominence and diversity of style. Some of the most notable performers are Rahsaan Roland Kirk [19], Pharaoh Sanders in the 1980s, David Murray with the World Saxophone Quartet [20], Michael Brecker [21], and Patrick Bartley [22]. This methodology covers a wide span of history and style. Although the analysis shows definite evolutionary patterns, it also identifies boundaries in subjective elements of tone and expression, which is also problematic in the research of jazz performance.

The collection of data was done by extracting the main excerpts of the chosen recordings; the emphasis was made on the tenor saxophone solo parts of Giant Steps. The measures of variables were taken using these excerpts included tempo in beats per minute, duration of phrasing, and harmonic substitution. Sonic Visualiser software created spectrograms to show the change of the waveform, based on the findings of performance analysis literature, such as the work of Russell [23] on timing variation in jazz. The original recording by Coltrane at around 285-300BPM was taken as a reference point. Further, the interpretations analysis will then focus on the Post-2010 era where Bartley, began to adopt slower motion and to allow more expressiveness. The study also involves quantitative spectrogram analysis and qualitative observations, particularly on tonal change that is associated with the development of instruments and equipment, as presented by Segell [24]. Though this approach is a balanced one, it is not without mentioning potential bias in the selection of the excerpts, which makes it ethically questionable, as is common in musicological research.

The analysis process comprised of splitting of the recordings into three timeframes the 1960s-1980s, 1990s-2000s and 2010s to date. This order made it possible to compare chronologically. Using Sonic Visualizer, tempo and spectrogram graphs were created to trace the quantitative aspects of the study. Johnson [25] study inspires the current study, allowing the utilization of the jazz's inter-onset interval data of rubato to assess the Giant Steps expressive timings. Notably, the study also employs qualitative analysis as inspired by Giddins and DeVeaux [11], to draw deeper insights on how Giant Steps interpretations have changed with each era since 1960. As such, the study takes into account the cultural and technological influences on Giant Steps interpretations from an individual artist choice. Hence, the mixed methods approach employed for this study provides a detailed approach to exploring Jazz performance evolution amid the growing cultural and technological influence prevalent in the 20th Century. However, the selected Giant Steps recording to represent distinct eras and the subjective interpretive commentary limits this mixed analytical approach adopted in the study.

The methodology employed in this study provides deep academic insights for jazz performance enquiries. On this note, the study's ethical challenge relates to copyright issues of artists' works and the existing subjective interpretations of the original Giant Steps by Coltrane. Moreover, limited access and

unavailability of rare pieces that challenge the deeper explorations of the study. Sonic Visualizer analysis also posits a major challenge to the study as it may distort minor acoustic information, as emphasized by Russell [23] excerpt on live and studio performance timing variations. To minimize these risks in the study, manual cross checking is necessary to confirm software results for result credibility. However, the analytical framework provides a robust basis to draw tenor saxophone performance evolutions since 1960's.

5. Analysis

To achieve the objective of the study, the analysis is founded on a chronological review. This allows categorization of the interpretive and composition styles such as tempo and harmonic designs through each era. For this, spectrograms will be used to trace and reveal the era-to-era shifts in improvisations, tempo and harmonic design. This will be compared to the original composition, and harmonic design of the Coltrane's *Giant Steps* in 1959. The quantitative data produced by Sonic Visualiser reveals an overall decrease in tempo, and the average values of BPM have decreased from the 285-300BPM range in the original Coltrane's recording. The qualitative analysis also demonstrates the change in style and purpose of expression. The comparative spectrograms in Figures 2–7 visualize these diachronic differences in melodic contour, timing stability, and phrasing.

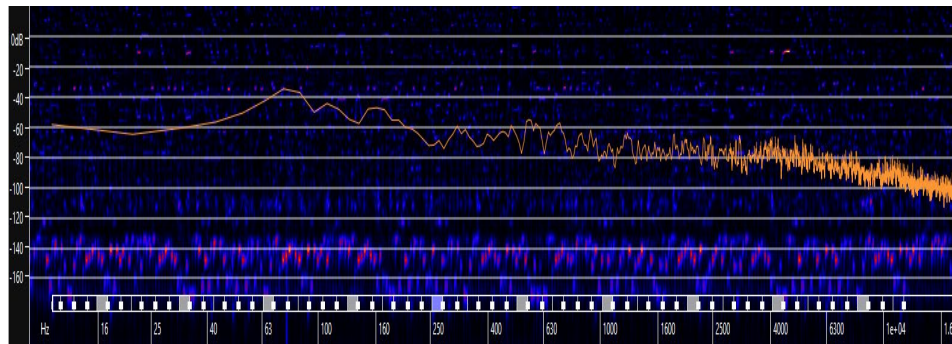


Figure 2: Melodic spectrogram of the original Coltrane “Giant Steps” recording.

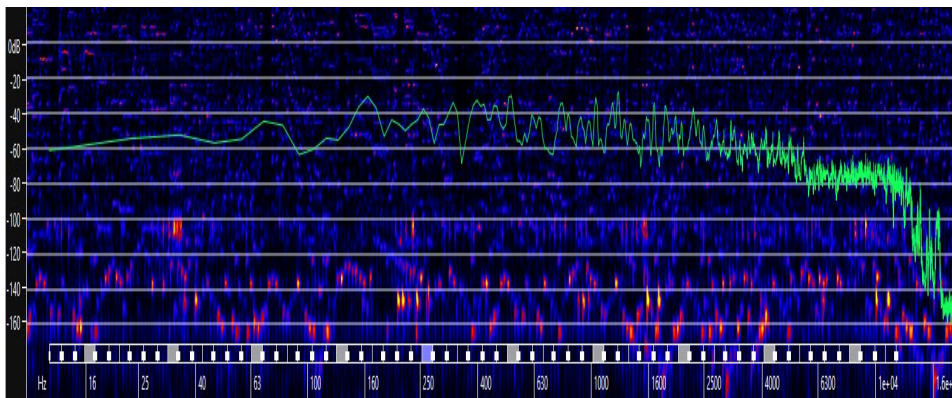


Figure 3: Melodic spectrogram of Rahsaan Roland Kirk's 1976 “Giant Steps” recording.

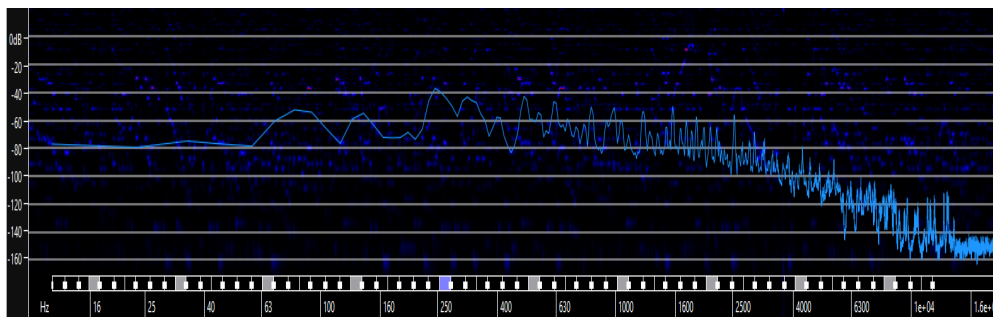


Figure 4: Melodic spectrogram of Pharaoh Sanders' 1986 “Giant Steps” performance.

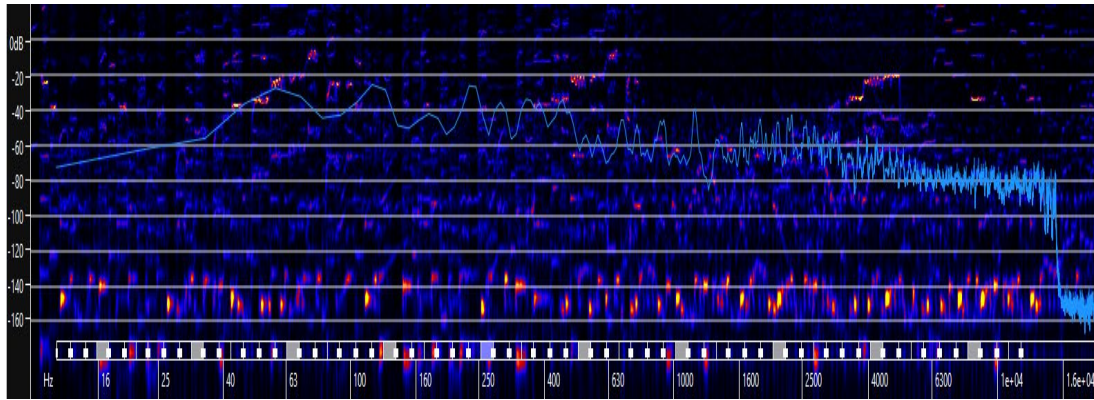


Figure 5: Melodic spectrogram of David Murray's performance of "Giant Steps".

In the 1960s-1980s, early interpretations were more inclined towards experimental freedom, and not precision as observed in the original works. In 1976, Rahsaan Roland Kirk performed on *The Return of the 5000 Lb. Man* depicts this change by applying multi-reeds, whimsical articulation, and protracted phrasing that is no longer strictly controlled like Coltrane was. Pharaoh Sanders free jazz context conditioned the similar exploratory disposition where expressivity was a key goal. In 1986, David Murray performed the version with the World Saxophone Quartet, which includes the use of the avant-garde dissonance, and spectrograms show that there is more rubato and timing instability. Combined, these examples indicate a shift towards replication to expressive liberation, predetermined by the cultural individualism of the post-1960s.

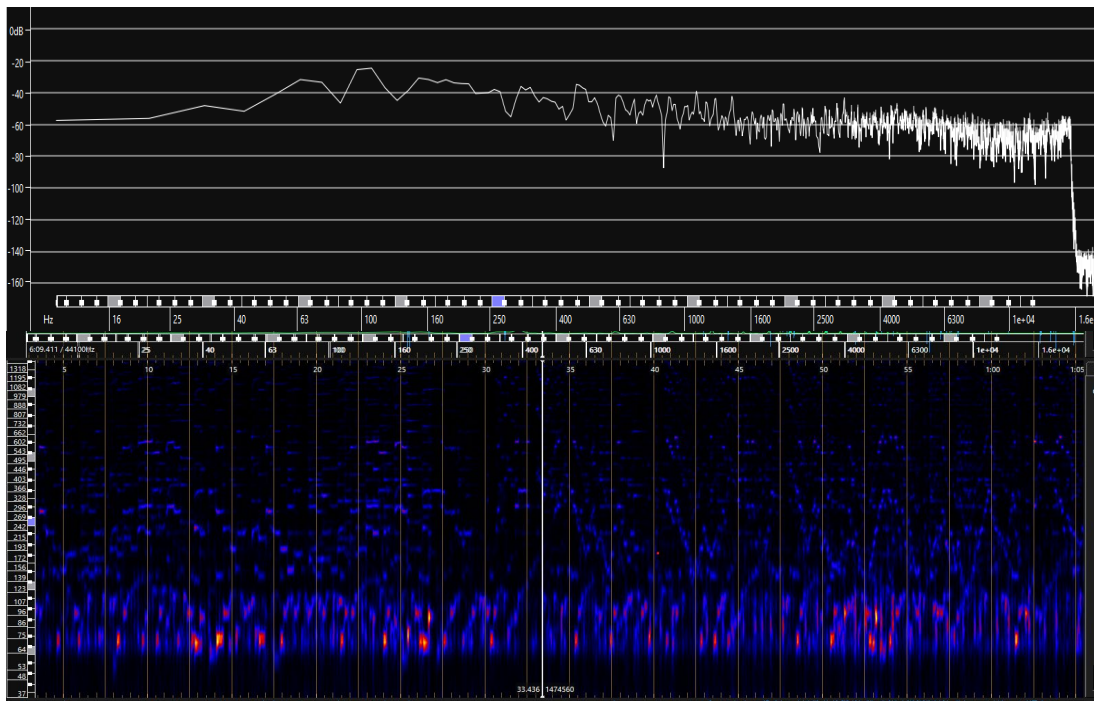


Figure 6: Michael Brecker's 1993 performance of "Giant Steps" (Version 1).

As shown in Figure 6, the 1990s and 2000s can be considered a fusion-based period of *Giant Steps* interpretation of the tenor saxophone. In this era, artists blended rock beats, electronics and developed technique in order to re-arrange the harmonic structure of Coltrane original work. Moderate tempo throughout performances during this era favored more layered and denser improvisation as compared to the fast tempo used by Coltrane. For example, 1993 performance that Michael Brecker did on *Twin Tenors*, *Giant Steps 1* with Bob Mintzer. His solo continues the pattern-based accuracy of Coltrane with a sophisticated rhythmic displacement and length of phrasing. The high energy and technical control of the performance are frequently described as the important elements in the critical responses to the industry needs at the time. This refinement is also evident in other projects such as Joe Lovano, where warmer sound and a slower tempo, appeal to the growing need for accessibility in the harmonic design of the performers and audience interests. In these recordings, there is reduced stability in rubato implying

the focus on clarity and accessibility by the listeners. More to this, all these developments lead to a change of direction, toward a more stylistic balance, commercial viability and jazz integration into the mainstream industry. Nonetheless, in this era, detailed spectral comparison is largely hampered by the disparity in recording quality.

Between the 2010s to present time, a reflective eclectic change in style of the Giant Steps interpretation on the tenor saxophone can be observed. Artists put more emphasis on exploration of modes and expressionism and not on the speed. More often, they tend to depart from the harmonic cycles of IC4 used by Coltrane to fit the modern performance situations. Spectrogram data show that there are additional tempo decreases with an integration of more musical instruments such as piano. The slower tempi make it possible to have longer phrases and more flexible harmonic substitution. This contemporary approach to performance can be seen in the 2012 recording of All Our Reasons by Mark Turner with the Billy Hart Quartet. His interpretation is only indirectly alluded to the original IC4 modulation with wider intervals leaps and freer tonal movement for harmonic integrity and uniqueness that reflects the contemporary performance. Additionally, in Patrick Bartley in Tokyo live performance with its introduction of modern stylistic elements, including musical influences. Combined, these modern instances underscore globalism of modern jazz, in which Coltrane harmonic frameworks are used to uphold various fusion influences. Figure 7 illustrates this contemporary tendency through Bartley's Tokyo performance, where slower motion and broader phrasing support a more reflective interpretation.

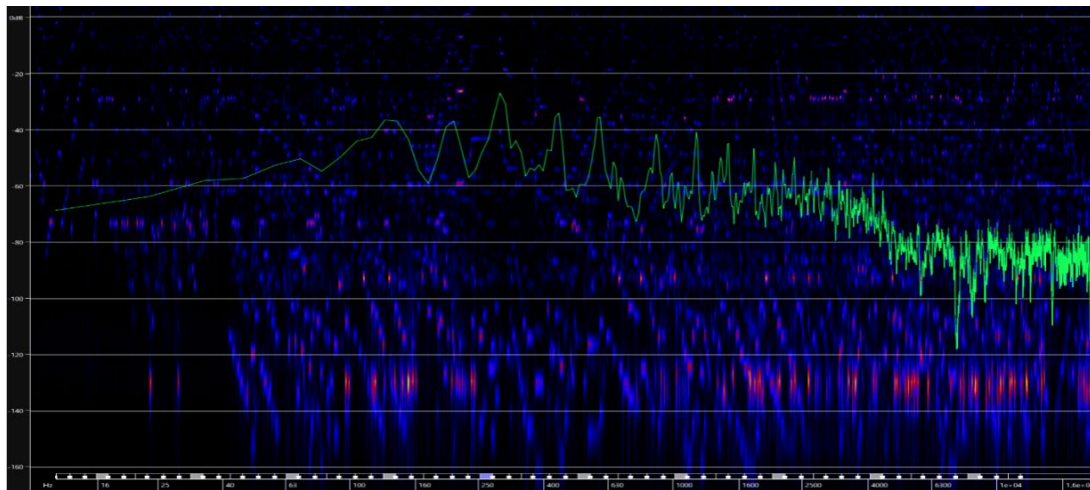


Figure 7: Spectrogram of Patrick Bartley's Tokyo performance of "Giant Steps".

6. Findings and Discussion

The results show a clear shift in the stricter technical imitation of the early post-1960s performance to a more eclectic and interpretive style in the recent decades. This transformation is part of the broader jazz trend to globalization and fusion of styles by the contemporary artists. Qualitative observations are supported by quantitative results such as gradual tempo changes and the use of rubato. Early musicians like Rahsaan Roland Kirk were attracted to avant-garde freedom whereas the mid-period musicians like Michael Brecker brought together fusion and technical accuracy. More modern musicians, such as Mark Turner and Patrick Bartley, implement IC4 harmonic cycles by modal thought, integrate more musical instruments and a variety of cultural influences. According to Tackley et al. [14], the development falls within the context of the long-term impact of Coltrane, in which Giant Steps ceases to be a threatening technical challenge for 20th century artists and becomes an open framework of interpretation for the 21st century artists. Porter [2] records the shifts in Coltrane's career from hard bebop styles to more spiritual compositions. These changes in composition indicate the continued conflict between the reverence of the original work and innovativeness. To the post-1960's artists, jazz performance is inclined towards slow chord progression and lower tempo which promotes accessibility to jazz as opposed to the original Giant Steps.

The study findings point towards a pattern of evolution which can be crucial in explaining how post-1960s artists opposed or supported the original Giant Steps. This will support the scholarly discourse and explorations in the future. For example, Litweiler [12] exhibits the free jazz nature in the post-1960's to incline towards breaking the formal restraints established by Coltrane's in 1959. This view is evidenced by Kirk [19] and Murray [20], with dissonance usage being more inclined towards emotional display

than the strictness of harmony. Nonetheless, this shift undermined the clarity in the navigation of IC4 harmonic design. Ratliff [13] is rather critical of the fusion-era accuracy of Brecker, seeing it as a partial commodification or commercialization of Coltrane's artistry that is neither too accessible nor too technical for artists. Whyton [26] warns against turning Coltrane's legacy into a myth, suggesting that modern veneration may be obscurement of the cultural borrowing in the current hybrid interpretations of culture. Combined, these contemporary trend signals increased inclusivity and interpretive openness in the modern artistry with major deviation from the rigidity of Coltrane's works in 1960's. However, the evolution represents western performances leaving out non-western performers out of the equation while also focusing on studio level performances.

7. Implications

The essay dispenses significant implications on future research and work in the field of jazz performance. The implications extended beyond tenor saxophone performances and explorations and can be applied in the wider academic and interpretive arenas. To the spiritual and cultural field's, Coltrane's artistry emphasizes the potential of extending the interpretations beyond the Western culture to include global spheres such as Asian music and Afro-Cuban cultures. More so, further studies can focus on archival explorations emphasizing intense combinations of the studio and live performances in the analysis to account for the real-time expressivity in the modern age.

The study offers a more analytical construct to the educators and academic world to ensure that the contemporary works are not only sophisticated but also available to artists. The tempo mapping is a data-based approach that offers an educator with a profound systematic structure where the inaccessibility of Coltrane can be eradicated to ensure the diversity, expressivity and creativity in the modern jazz performances. The research also revitalizes the applicability of Giant Steps in the modern society despite the fact that modern composers still strive to achieve expressivity, slow tempo and accessibility. For the artists, the study creates an opportunity to resurrect the complex composition that Coltrane developed and incorporate their talents that capture the modern artistry that technology and culture bring to the arts. To this, the study may be considered a trigger to sophisticate jazz performance in modern age and reinforce the academic discourses.

8. Conclusion

The study is an examination of the way tenor saxophonists have developed in terms of their definition and interpretation of the Giant Steps in the post-1960s period. The results reflect a changing culture in the era of post Coltrane where strictness and technical accuracy have changed to more expressive and multi-instrumental form. Based on the analysis, selected recordings demonstrate slow tempo in jazz recordings in contrast to the original piece by Coltrane in which fast and complicated harmonic movement was central. To be more specific, the tempo and sophisticated key shifts have been substituted with less intensive tempos. This has allowed artists to be more expressive, integrate more harmonic variations and audience engagement while accommodating less skilled artists formerly excluded by the complex performances and recordings.

Since 1960's, each artist presented a different yet less sophisticated recording style of the Giant Steps. Rahsaan and Murray avant-garde freedom where artist's broke from the rigid framework established by Coltrane's. The contemporary artists such as Bartley represent a new era where not just freedom in expressivity is the focus, but also audience and culture influence. To this end, subtlety and stylistic hybridity is more prevalent in the modern jazz saxophone performances with slow tempo underscoring the growing interest to engage audience. The post-1960's era therefore indicates an era where artists have shifted from rigidity and rigorous chord progression into a creative and free spirited artistry. However, the original composition of Giant Steps remains relevant to academia and artists as a benchmark for the shifts across periods. Future studies can also be developed to consider live performance, studio recordings and non-western jazz practice to deepen the insights while underscoring the critical role played by Giant Steps.

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