Sonic Environment Studies (SES): Classifying, Measuring, Monitoring, Circle-Curricular Modeling to bridge the Sonic Environment and the Music Chain in Defined Territories

Dr. Joe Peters [1]
Singapore Musicologist and Educator
Email: sonicasia@singnet.com.sg

Abstract

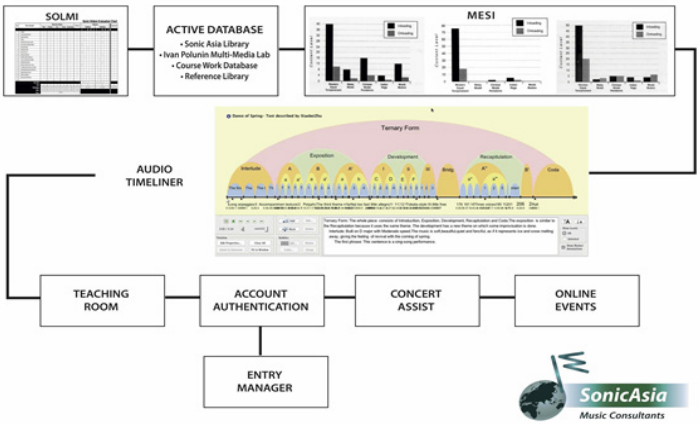
SES (Sonic Environment Studies) are designed as an integrated macro-music educational package planed to be delivered online through a protected digital platform by the end of 2024. It is available now as partial applications that can be used in music courses They contain integrated study-sets based on the principle of music-relevance to defined territories, timeline annotation integration methodology, analysis methods, measurement procedures and the use of integrated multimedia digital technology to bind data as products for the music chain. The sole aim is to understand the musics of the world by focusing on defined territories, their defining musical systems and the use of the available digital database assets to explain and create music education products. Presently the database has assembled 60,000 annotated music tracks (and growing) covering the world music systems, a large part dealing with Asian musical products. The database is setup in a protected manner, so that the music business in the music chains (composers, performers, service providers and listeners – the super majority) can stay satisfied and benefitted, while sonic environments stay protected. Collaboration and contributions through cross territorial classroom interaction and/or collaboration with relevant music-recording collectors and databases, should grow this study into the future, expanding the whole scope of study on this subject – which is relevant worldwide.

The central purpose of SES is to educate the listeners (the super majority) in the music chain on the content in the sound through the most relevant/direct way – which is to bring instruction (voiced, text and graphics) directly to the sound timeline. This will help pedagogy arrest elemental migration (with pitch being the most important among the others, rhythm, form, timbre and aesthetics), The SES measuring tool SOLMI (Sonic Orders Listening Mode Index) can assist in tracking elemental migration in complex transmissions in the

sonic environment, jostling to adjust musical elements to find listeners through sonic emitters (radio, television, concerts, records and now the internet). Thus, SES was developed to ensure the common music-listeners are skill and not just exposed or informed in their school or tertiary music education. It is evident today that music disciplines (musicology, education and performance) are facing issues, problems and difficulties, with elemental migration of traditional and indigenous musics towards the dominant Western musical system, loosing much of their pristine qualities. There is much chatter in the music disciplines but nothing useful to solve this massive elemental migration. SES actively engages a new generation of young persons who may understand the new technologies and be able to navigate the offerings with ease and exhilaration. Nevertheless, all other age groups are not forgotten. Professionals who come out of SES would be able to create momentum then and for generation into the future.

Keywords: -

Musical relevance underpins the design formulae, the pedagogy and the architecture of the central engine called TMAL-P (Timelime Music Annotation Lab/Library-Pedagogy). Refer to Figure 1: TMAL-P (below)



TMAL-P components are: a. SOLMI (Sonic Orders Listening Mode Index) is for music audiation guidance/measurements/skill development; grading b. Audio-Timeliner, a new opensorce software that aids and develops music listening-skill via text-to-sound/graphics annotation and

central to grading individual talent/skill at the actual sound-timeline.; c. Circular Music Curriculums, for music education programmes based on life-cycles e.g. school/tertiary/work/retirement, so music education can become a life-long learning skill which in turn will have an effect on the music chain; d. MESI (Music Emissions Sustainability Index) is a circular curricula construction/evaluation tool for planning, monitoring and sustaining balance in the sonic environment emissions that teaching and learning (traditionally) have to achieve, but have not succeeded so far in Asia.

SES needs a twelve-year teaching and learning cycle for schools using circular curricula - at least, to learn and develop in a first run. Comparative studies between participating defined territories can (and should) be part of the strategy for teaching and learning mixed musical systems, because of the sophistication of the current internet would allow this with ease.

The real question is: Why SES? Musical systems around the world are fundamentally different from each other (see the Maceda Effect below). However, because of technology domination as well as the thrust of Western music businesses, the Western major/minor (tertian music) system dominates through sustained technology advantage, habits and practices in the discipline of music education and the lack of deep knowledge about the pristine other musical systems and their vast repertoire that exists but cannot have a role in the music chain even in their own defined territories. There is much more information that has to be still gleaned on this subject and published in user understandable ways. More professionals trained in explaining the musics in the non-Western domain are needed. SES has prepared and is now configuring the application methodologies for the purpose of assisting in this area of music research and education.

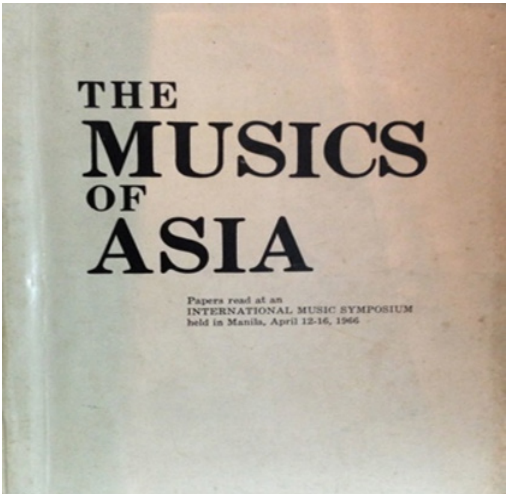
The Maceda Effect:

The late Professor Jose Maceda, my teacher at the University of the Philippines, demonstrated through his musicological fieldwork, how national musical assets of the Philippines could be documented, enhanced and creatively used in education, composition, and performance (Maceda, 1981). He also wrote musical works that linked deep field research work, where after documentation and publishing text, his musical compositions helped to further the academic effort in two directions: concepts from the field could move to the theatre through compositional works, and, precise field methodology becomes the backbone for efficient musicology that has technical bases supporting musical logic. One of his first works I heard (and recorded) in 1978 was Ading - a week into my Masters in Music study. It engaged a full auditorium in an idiom of sound that I never heard before. I was convinced that I made the right choice to

study in the Philippines rather than in USA.

The Musics of Asia (1966), presented as a pre-scientific approach on this issue of pitch intervals as defining the unique musical systems in Asia (and elsewhere too). In some ways it is like what the German School did, many decades earlier as a scientific approach to musicology. Unfortunately, they came under criticism, and dissipated, and ethnomusicology rose up, to act as an academic czar on the world stage since. Today, ethnomusicology has to be questioned, not in articles, but by new music educational methods that include musicologist who went to the field and whose collections are left unused. Maceda brought together eminent musicologists from both sides of the Pacific for such a presentational discussion in 1964, when there was deep concern in the Asia Pacific territories because of the audible first signs of elemental migration of Asian's pristine musical systems to the Western musical system. This conference focused on the element of pitch, showing graphically (but not in quantized form) the fundamental pitch differences existing in the musics of Asia. Refer to Figure 1.

Figure 1: The Musics of Asia and its Impact on ASEAN Musicological Projects (1989 – 2003).



An outcome of his long and diligent fieldwork with the Igorot community in Banaue province The Musics of Asia its Impact on ASEAN Musicological Projects (1989 – 2003).

Musics was presented as a justified plural in a landmark meeting of musicologists 1964, and its publication in 1966, and the antecedent field-music research developments in ASEAN (Association of South East Asian Nations) to reinforce that plural between 1989 – 2003, which

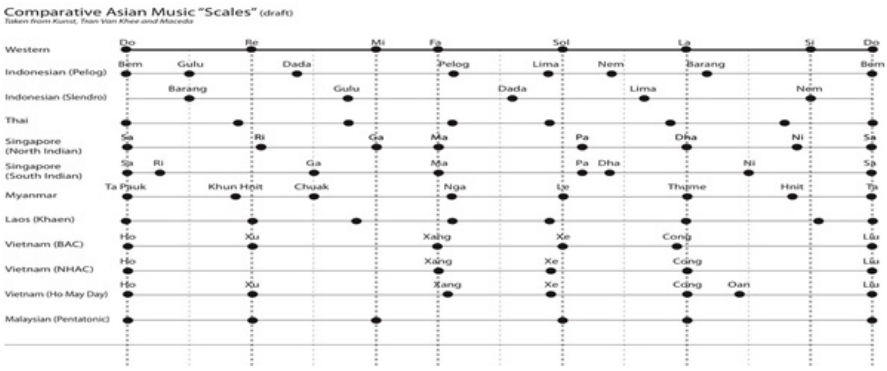
included a scientific engineering laboratory investigation into a method for pitch-interval analysis. The latter is also a reminder, re-connecting to a much earlier heated discussion between USA and Germany on this very subject, and which led to the creation of ethnomusicology – a discipline that has become mesmerised with academic writings about thoughts/observations on musicological issues stemming from a variety of activities, including field recording-based research. Maceda was well versed with the Filipino indigenous communities one of whom were the Igorots in the mountains of Sagada in Banaue province in Northern Luzon, where the very first ASEAN project took place. Many observations were made, a crucial one being that tribal communities have a face in face out mode of existence in the modern era, and music education for all is a strong part of their culture. SES hopes to carry on this message as the Maceda Effect to all around the world.

Other ASEAN projects that followed were: a. 1993: Forum Papers in Singapore, published with two CDs containing conference performances by traditional music groups in Singapore and the compositions by the forum participants ; b. 1995: The Musics of ASEAN by the Philippines - an academic exercise coordinated by the Philippines to accede to a request from music educators; c. 1997:na field music project in Thailand that expanded on earlier projects and also included 1 CD that followed the form done in Singapore; d. 1998-2003: Sonic Orders in ASEAN Musics – a field to laboratory project that had the first engineering lab-based study on pitch intervals, using the expert services of the Engineering Faculty at the National University of Singapore. Two text volumes and 10 CDs were produced, which included the forerunner of TMAL-P products called study-tracks where experts did voice-overs on musics from their country.

These Asean Music Publications (including the 1966 book titled Musics of Asia) are available in PDF as part of the huge digital TMAL-P library for this course. Send an email stating how you will use them and if you would need further assistance to understand Sonic Environment Studies. Introductory presentations can be arranged online: sonicasia@singnet.com.sg

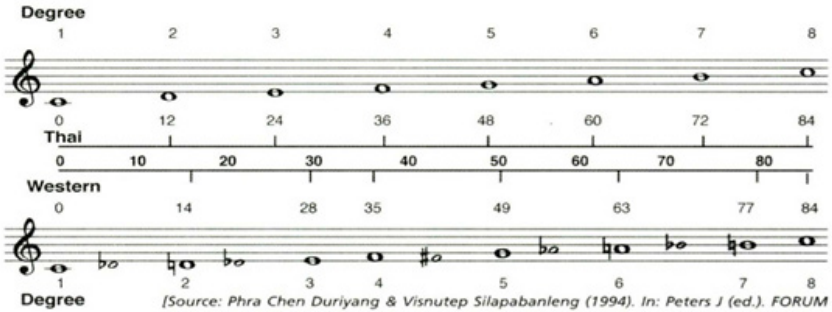
ASEAN Musicology Publications

Ironically, the Philippines itself, could not contribute a graphic of tonal intervals in the musical system of the Igorot's (at least) for the Musics of Asia, that can be seen in Fig 1. That is because it has too many small pocket-communities around their large island-based domains, all with their special pitch intervals and soundscapes. The Igrots of Sagada in Ifugao province Banaue have their special system where flutes are personalized for the men, based on the width of their two fore-fingers, for cutting the sound-holes. This adds to the variety of differences that challenges musicology even further, to try and place a representative intervallic graphic for the Philippines in publications. Maceda's belief is that such intervallic sounds must persist in trans-mission and imbibed. A lofty idealism when the sonic emitters are not in-direct reach or control of the music discipline!



The Thai equidistant 7-tone scale, which was first discussed in Europe in the 19th century, was revived again in the discussions in current times. David Morton wrote on Thai music (Maceda, 1966) generalizing that the surrounding musical cultures of India, China and Indonesia had an impact on Thai classical music, but at the same time, he also thinks the Thais' simplified much of what they had. He did mention the seven-tone scale that intrigued many musicologists but did not mention it as an equidistant one, which is always a major (recurring) discussion. This was later written out clearly in the Singapore project, Forum Papers, 1993, where Phra Chen Duriang and Visnutep Sillapabanleng showed graphically (Fig. 2) the seven-tone equidistant scale based on the ranat (Thai xylophone). There is much discussion still going on in Thailand on this difficult subject.

Fig: 2 Thai 7 Tone Equidistant Scale



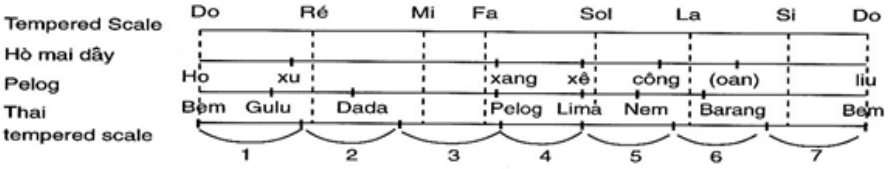
[Source: Phra Chen Duriyang & Visnutep Silapabanleng (1994). In: Peters J (ed.). FORUM PAPERS: Evolving Traditions. Singapore; National Arts Council / ASEAN COCI, pp.42–52.]

Gazoli J (2015) who did an extensive probe into this issue (in a PhD exercise) of the 7-tone Thai scale, but described it as a myth, without the needed sophisticated laboratory equipment that the German School used in an earlier era. Gazoli's presumption was based on a variety of ranats from some of the well-known universities in Thailand had, but without the Silapabanleng family collections. Thai musicians (generally) have tremendous freedom and liberty in performance and they are really not aware of what the academics say or believe. It is their livelihood and they need paying audiences for their wages. Therein lies this issue of pitch-migration. That issue is for Thailand to work as a team to resolve.

Researchers who work and publish through foreign universities must be aware of the need for extra due-diligence. My personal exploration in the 10 years I lived and taught in Thailand (2011-202) shows that the Silapabanleng family has to assist in this endeavor to establish the truth of the 7-Tone scale, because the answer lies in some old models of the ranat. This was the discussion I had with Visnup Silapabanleng, the senior in the family, when I met him in Singapore in 1993. While I was in Thailand in recent years, I had discussions again with the younger members in the family with whom I still keep in touch. I will keep urging Thailand to try and settle this rather important piece of information that came down from very early observations.

Tran Van Kee (1966). Note the error in the graphic as 1971. He did his version of an Asian musics comparative chart shown in Figure 3, where he maintains this idea of the seven equidistant tones, which he calls the Thai tempered scale, a totally unique tonality in Asia.

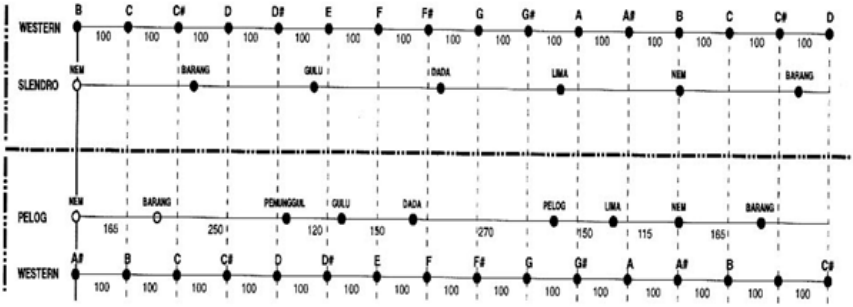
Figure 3.



Source: Trần Văn Khê (1971). Elements of musical structure in the Vietnamese tradition. In Maceda, Jose (ed.) The Musics of Asia. Manila: National Music Council of the Philippines, pp. 77 - 89.

Likewise, Jaap Kunst (1994) also constructed his chart on Indonesian Slendro/Pelog shown in Fig. 4, which was published by the Amsterdam Royal Tropical Museum. He juxtaposes it with the tempered Western system to show the Europeans, how crucial the pitch differences are. His vast studies on Indonesia are now kept in Amsterdam and it would be a great resource for any future academic/musicologist who digs deeper into sonic orders.

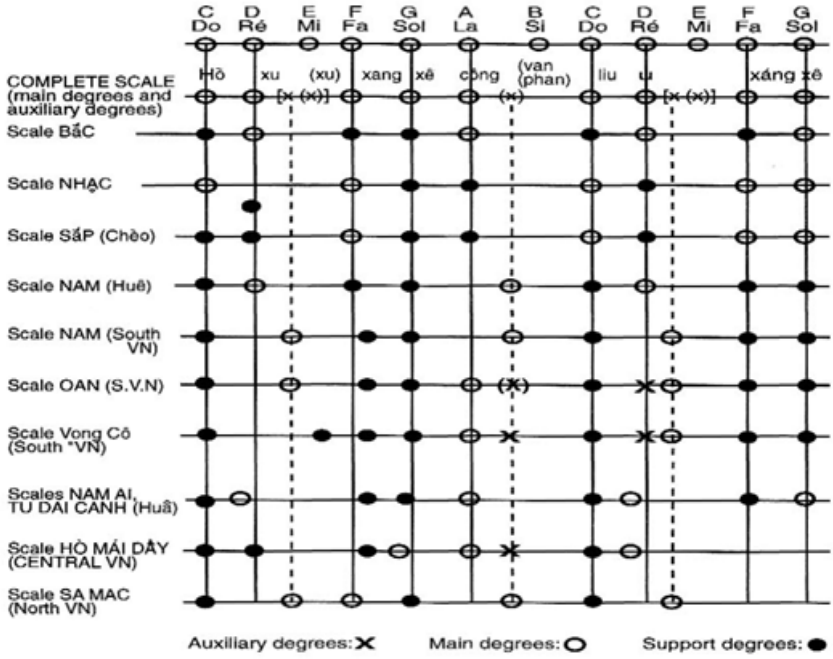
Fig 4 : Kunst's Approximate Comparisons between Pelog/Slendro and Western Tempered Chromatic Scale



Source: Jaap Kunst. (1994). Indonesian Music and Dance. Amsterdam: Royal Tropical Museum, p.68

Tran Van Kee (1966 – another printing mistake on the date in the chart) did present another chart showing more Vietnamese music scales in the Macada publication (See Fig 5). Tran's huge collection of research material lies in a bungalow in Ho Chi Min city. SES in time will make a request for usage.

Figure 5: Vietnamese Pentatonic Scales



Source: Trần Van Khê (1971). Elements of musical structure in the Vietnamese tradition. In Maceda, Jose (ed.) The Musics of Asia. *Manila: National Music Council of the Philippines, pp. 77 - 89.*

Conclusion

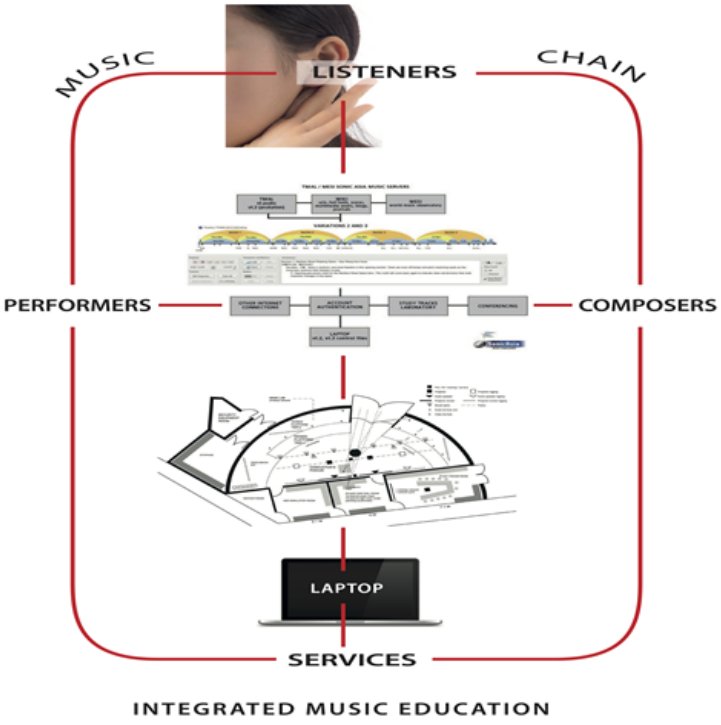
Based on these few examples, which anyway needs to be re-visited and probably re-study in the laboratory, we can see there is much in Southeast Asia to warrant deeper study and scientific analysis in regards to our musical systems . The early European musical landscape 2000 years ago was fundamentally not much different from what it is now in Asia – a myriad of musics (religious chants in the case of Europe) that served different defined territories through one religious order (Catholic). It took them three centuries (5th to 9th centuries) to evolve harmony, and then seven centuries before a monk in North Italy to discover the missing comma, that finally broke loose with Bach's Well Tempered Clavier, to recognize and appreciate what we know now as Western music. The point made here is that time and effort is needed plus resolve with underlying objectives. Western technology domination seems to pivot

the many defining Asian musics to amble around it to get to markets in the music chain. It is the responsibility of colleges that specialize in music to iron this out in a deep and

serious way. There must also be a way to evaluate this via a technical blue print.

The strategic message in SES is that circular-curricula must be measured with linkages to the Music Chain (See Fig 6). The role of this chain must be brought into the purview of music as a major discipline on par with all others subjects. It is vital that music is seen as a wholesome and efficient and cukturally relevant industry and that universities must play a central role in the research and development aided by/through scientific collaborations and developmental measures that stand up to current times and needs.

Figure 6: The Music Chain



In the meantime, I hope Buriram Rajabaht University will take the lead and join the race for homegrown technology applications through deep research and development. The main goal must be to sustain local pitch and other elemental musical content, through multi track circular curriculums, with new pedagogies and measures to track (over timeline years) the

absorption of the innate musical sounds of your territory and larger land. Buriram has been earmarked as the technology city of Thailand. So there should be no issue for a good paper, written by a group of deep thinking pedagogues and technical experts, to see such a project through, even if it takes many lifetimes. Once gone it is gone!

Dr. Joe Peters has had a dual career at the National University of Singapore in separate divisions (music and educational technology) between1971-2009. He was a student of the legendary musicologists Professor Jose Maceda at the University of the Philippines, where he obtained a Masters in Music. He read for this PhD at the University of Western Australia, where his concepts surrounding sonic orders and circular curriculums took root. He served as Singapore's as a representative in many ASEAN music projects including Sonic Orders in ASEAN Musics (1998-2003). Between 2000-2009 he taught at the Singapore Management University in a laboratory built on his design, which is now TMAL-P as a digital one. Between 2011–2021 he taught in PhD programmes at universities in Thailand (Mahasarakham and Nakon Phanom). Currently, he is developing his two favorite projects: Tremolo Strings and Sonic Orders. All embedded in SES).