

CHAPTER I

INTRODUCTION

A. Background of the Study

Music and language are both subdivision of culture and a part of human aesthetic. As many as the unique of cultural product, they give wide variety in the pattern of sound, rhythm, melody, syntax, and meaning which is developed by every background. It is quite deniable if music is mentioned as a uniqueness of a culture, yet there is any different opinion about it which says that music is a universal language that can be understandable around the globe.

“Like language, music is a human universal involving perceptually discrete elements organized into hierarchically structured sequences. Music and language can thus serve as foils for each other in the study of brain mechanisms underlying complex sound processing, and comparative research can provide novel insights into the functional and neural architecture of both domains. (Patel, 2003: 674; Engh, 2013: 116)

To be sure that there is a strong relationship between music and language, many neuro-scientist, linguist, and musicians did study to ensure how these two things are related to each others. Of course, interest in music-language relations does not come in this recent time out. Over 2,000 years ago, Plato claimed that

the power of certain musical modes to uplift the spirit stemmed from their resemblance to the sounds of noble speech (Neubauer, 1986).

Music becomes more interesting branch that is wanted to be discussed. A typical instance of an academic subject often positively correlated with musical abilities is learning a second language (L2) (Herrera,Lorenzo, Defior, Fernandez-Smith, & Costa-Giomi, 2011; Milovanov,Huotilainen, Välimäki, Esquef, &Tervaniemi, 2008; Zeromskaite,2014). Language and music are unique to humankind and researchers are interested in exploring and understanding the relationship between the two (see Patel & Iversen, 2007 for a broad overview). Studies comparing the L2 skills of musicians and non-musicians found that the former performed better than the latter in detecting the tones of a foreign tone language (e.g. Mandarin Chinese), and in perceiving the phonemes of a foreign language (Herrera et al., 2011; Marie, Delogu,Lampis, Belardinelli, & Besson, 2011; MartínezMontes et al., 2014; Lee& Hung, 2008; Sadakata&Sekiyama, 2011). Other studies showed that music training is also positively related to L2 pronunciation skills, and to comprehension and vocabulary knowledge (Posedel, Emery, Souza,& Fountain, 2011; Swaminathan & Gopinath,2013).Yet, some debates also exist in whether music and language share a similar cognitive processing resource (Patel, 2008; Peretz& Coltheart, 2003). Then, over the last several years, a more specific focus on the relationship between structural (or syntactic) processing in music and language has received increasing attention (for recent reviews, see Patel, 2008; Slevc, 2012; Tillmann,2012).

In both music and language, discrete elements are combined to form larger structural units according to conventions that can be codified into a set of rules (e.g., rules of tonal structure in music and rules of morphology in language) (Sun, Lu, Ho, Johnson, Sammler, & Thompson, 2018). “Syntax” has been defined broadly as a set of rules governing the combination of discrete structural elements into larger units (Asano and Boeckx, 2015). This broad definition raises the possibility that music and language draw upon shared cognitive resources for syntactic processing (Patel, 2003; see also Koelsch, 2012). Knowledge of syntax (when combined with additional relevant information) determines that incoming sequences of individual words or tones are perceived in terms of hierarchical relations, which in turn directs the meaning extracted from the sequence (Jackendoff and Lerdahl, 2006; Patel, 2003; Chomsky, 1981).

However, the most intriguing correlation of “syntactic structure” in language and music force to a question whether the neural system and the cognitive operations are specific to language or may be shared between domains. The strongest evidence in favour of shared syntactic resources comes from investigations on speech and music perception (Koelsch, 2011; Patel, 2003). Here it has been shown that syntactic violations in the two domains elicit comparable electric brain potentials (Koelsch, 2005; Patelet al., 1998) and activate overlapping brain regions (Abramset al., 2011; Sammler et al., 2009) including Broca’s area and its right hemisphere homotope (Maess et al., 2001), i.e., areas

that have been typically associated with syntactic processing in language (Grodzinsky and Santi, 2008). In 2001, Maess et al. (2001) stated that “Musical syntax is processed in Broca’s area” and suggested that this region may “process syntactic information that is less language-specific than previously believed”. More precisely, the authors reconstructed the sources of the magnetic equivalent of the Early Right Anterior Negativity (ERAN), a component of the event related potential (ERP) elicited by harmonically unexpected chords and taken as an index for early music-syntactic processing (Koelsch et al., 2000; Koelsch, 2009).

On psychological science, musicians have been an interesting subject which could extend beyond their musical domain. This superiority could be seen when they are compared with non-musicians, and it could be observed in a classic auditory task (Talamini, Grassi, Toffalini, Santoni, & Carretti, 2018). Interestingly, several advantages also happen in cognitive area. For example, musicians outperform non-musicians in memory tasks, for instance (e.g., Brandler & Rammsayer, 2003; Chan, Ho, & Cheung, 1998; Grassi et al., 2017; Jakobson, Lewycky, Kilgour, & Stoesz, 2008; Talamini, Carretti, & Grassi, 2016; see Talamini, Altoè, Carretti, & Grassi, 2017 for a comprehensive meta-analysis), and in Visio-spatial tasks like the mental rotation test (Sluming, Brooks, Howard, Downes, & Roberts, 2007; Stoesz, Jakobson, Kilgour, & Lewycky, 2007). They also seem to perform better than non-musicians in language tasks, showing a more extensive vocabulary knowledge (Piro & Ortiz, 2009), and better reading decoding skills (Butzlaff, 2000).

Linguists believe that musicians have a good grammatical and syntactical capability, for they do “improvisation” in music, as specifically jazz. However with no highly impression of the people, there are still some hesitations about how music can evolve one’s language ability. Therefore, this study will be constructed to find correlation between having musical syntactic competence and language syntactic competence.

This study is also based on verses in Qur’an on Ar-rahman 1-4, which is telling about how Allah creates human with capability of using language, because He has already taught or given this ability to us from these verses, as follow:

الرَّحْمَنُ ۖ عَلَّمَ الْقُرْآنَ ۖ خَلَقَ الْإِنْسَانَ ۖ عَلَّمَهُ الْبَيَانَ

And also based on verse which telling that God creates language varies, and as a human being we should learn about each other. To expand our knowledge is also better to know others’ languages. As the verse explain below:

Language is referred to in verse (30:22) of chapter (30) *sūrat l-rūm* (The Romans):

وَمِنْ آيَاتِهِ خَلَقَ السَّمَوَاتِ وَالْأَرْضِ وَأَخْلَفَ اللَّسَانَ وَاللَّوْنِ كُمْ إِنَّ فِي ذَلِكَ
لَآيَاتٍ لِّلْعَالَمِينَ

B. Statement of problem

As important as English language, music becomes more important to be improved. Many English students believe that with music they can be easily learning English from a song's lyrics. They can understand about how the sounds are pronounced and try to imitate the sounds. These are proven in a theory, according to Patel, which says that language and music have a significant correlation in the matters of pitch and rhythm. Furthermore, study found that musical syntactic ability would gain the language syntactic ability.

At a glance, this is a theory that is difficult to be believed, for not all of the musicians, who are also learning English as their major, have a good syntactic ability in English Language. Also, the process of the correlation between them, that happens inside the brain, makes this argument very "weak" among people who doesn't know anything about this theory before, and the process will be different in a normal brain and the abnormal one (Patel Speech in Library of Congress entitled "Music and Brain: The Music of Language and the Language of Music": 2008).

From some pre observations, the researcher has found that there are some English students, that have good understanding in musical syntax, still find difficult to learn about the English language syntax, and vice versa. Because of this dilemma, researcher wants to know about the correlation between those two variables; is there any correlation between them or not.

C. Research Questions

1. Is there any correlation between musical syntactic competence and language syntactic competence?
2. What extent is the correlation between musical syntactic competence and language syntactic competence?

D. Objective of the study

Based on the the statement of problems above, the purposes of this research are :

1. To find it there is any correlation between musical syntactic competence and English language syntactic competence.
2. To identify the extent of correlation between musical syntactic competence and English language syntactic competence.

E. The Scoop of the study

This study is conducted only for knowing the correlation between musical and language syntactic competence with the right measurement of comprehension test. Other factors, like any correlation inside the brain, are not included as the objectives of this research. Therefore, the researcher only chooses samples who have already known those two model of syntactic competences to be assessed with tests.

F. Significance of the study

It is expected that the result of this research will give many inputs as follow:

1. Teachers

The result of this research hopefully can be useful input for the teachers to assure English Department students who have good musical ability to develop their musical syntactic competence to be one of their supplement method for developing their English syntactic competence.

2. Students

The researcher hopes that this research paper will be useful for the students especially about knowing the importance of studying music for increasing a language competence, and could be a best method for the one who has music as the passion.

3. Other researcher

This research hopefully will be useful for the other researchers who are interested in investigating the other things which have relation to this research.

G. Definition of key terms

In order to make the readers get easier in understanding this study, here the researcher will give the definition of some key terms that important to be understood as the following:

1. Correlation

Correlation can be explained as a single number which describes the extent of relationship between two variables. The relationship between these two variables is described through a single value, which is the coefficient. “*Correlation coefficient ‘r’* is a number that represents the level of relationship between two individual variables” (Washington et al, 2010).

2. Music syntax

Music syntax is a set of rules that is used to make a proper music, including the usage of multiple level organisations in music (pitch, chord, and key) and the pattern in hierarchical structure of sequences.

3. Language syntax

Language syntax is the part of grammar that represents a speaker’s knowledge of the structure of phrases sentences.

4. Broca’s Area

Broca area is proved as the area inside the brain that processess syntax, both in music and language. BA 44 and 45 are the areas that are used to process syntax in music and language.