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# Music of the Openings' Japanese Animes as a Tool for People with Reduced Visibility: The Case of *Shingeki no Kyojin*（*Attack on Titan*）

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***Abstract***—Music has been considered for decades as a tool to express emotions. In the case of people with some physical disabilities, they are able to develop what is known as echolocation. Echolocation means that the development of some of the senses to compensate the lack of one of them. For instance, it has been suggested that people with reduced visibility have a more developed hearing capacity. In series or films, music is fundamental to contextualize the viewer in the story. Music becomes an indispensable element to help people with reduced visibility to understand the plot and to avoid ambiguities, in the absence of an audio description. Since the songs of Japanese animes have not been as studied as other soundtracks from this point of view to our knowledge, the three openings of the anime *Shingeki no Kyojin* have been chosen to carry out the study. The preliminary descriptive study explored the perceptions of people with reduced visibility by reproducing the three opening songs of *Shingeki no Kyojin* and asking the users questions related to their thoughts about the anime, their feelings when listening to these songs and the possible story that this anime could be about. It was discussed that users could identify in general the plot of the story and their perceptions corresponded to what the songs should transmit, taking into account its chords and harmonies.

**KEY WORDS**: Anime, storyline contextualization, echolocation, emotions, music.

## I. INTRODUCTION

MUSIC is composed of melodies, notes and harmonies, created by impulses and vibrations. If the blind person can develop echolocation to situate himself/herself in space and time, (s)he may be able to perceive vibrations that the sighted person would not receive, as they focused on the image that accompanies the music. In order to explore the degree of influence of a particular piece of music on an anime in people with reduced visibility, we extracted the song from its context to study people with reduced visibility. We can examine whether the music complements the story or, on the contrary, the songs overshadow it.

In this study, the relationship between music, the identity of the individual and their bodily perceptions will be discussed. Also, music and emotions nowadays and in the antiquity will be explained. Then, the Braille music for blind people will be exposed. Next, the phenomenon of echolocation will be briefly analysed. After this theoretical explanation, an analysis of the current situation of the adaptation of manga and anime for people with reduced visibility will be explained. Then, a contextualization of *Shingeki no Kyojin* and a musical analysis of its three opening songs will be presented. Finally, an explanation of the results of the survey and the conclusions of these results will be given.

## Ⅱ. MUSIC AND IDENTITY

Regarding popular music, Simon Frith［14］points out that there are several reasons why people enjoy this type of music: the first one is because it is a way of creating and showing others our own identity and of placing ourselves in a specific place within society. Everybody knows both what they like and what they do not like, so these likings and their own identity bring an identity to the user. This identity will place him in a determined social group. Hence, following the line of Frith［15］, music has always been a fundamental resource for group identity（e.g., nationalism）.

The second reason that Frith［14］notes is that music allows us to "manage the relationship between our public and private emotional life", which means that it allows us to represent the emotions that people want to express and cannot do through words.

On the other hand, the third reason is that popular music allows the user to be transported to another dimension, to another time, and to evade the concerns of his/her present life.

This last reason is the one that Frith［14］affirms that it is the one that turns popular music in an essential resource for the social organizations of young people, since, as the user grows, music becomes something more secondary and it is implied with less intensity in it.

Thus, in the end, music allows people to create their own identity and being distinguished from others, and it expresses emotions in the way that individuals would like to do it. This is, basically, what makes music essential and special for the daily life.

## Ⅲ. MUSIC, EMOTIONS AND BODY PERCEPTIONS

Isabel Cecilia Martínez［6］argues that imagination plays a fundamental role in musical cognition, since it is what gives meaning to the music that we hear or interpret.

Martínez［6］affirms that the way musical experience gives meaning does not only depend on the performance of the individual as a biological and social being in his/her cultural context, but also on the way in which music is conceived as a domain of human production. In this way, Martínez［6］formulates the hypothesis that would hold the following:

"The cultural environment shapes the nature of the musical practices that take place within it, and consequently, it is to be expected that the cultural differences give rise to the attribution of different meanings".

It means that music can be interpreted and even composed in a different way depending on the culture of the artist or the listener. The same melody can express several meanings in different people that listen to it, according to their own lives and experiences. However, even if the cultural environment where the individual is involved can change his/her own interpretation of a song, the composer creates the piece with an intention, which can be, for instance, to transmit sadness, joy or melancholy. So, the attributions of that piece would be associated with the feelings that the composer wants to transmit.

In this point, Martínez［6］affirms that music would generate emotional responses through the connotative, referential capacity, which would be linked to the metaphorical interpretations of human understanding.

Hence, the meaning of music would not be purely objective, but would be related to the ability of human beings to build meaning, based on the imaginative structures through which we apprehend reality.

In this way, according to Martínez［6］, thought would not be composed only of simple abstractions of symbolic systems produced by algorithmic manipulation, but would also be the result of imaginative and bodily structures.

Thus, Martínez［6］points out that neurobiological research has carried out several experiments, based on the concept of global neural mapping, and the

coordination of perceptual activity in the brain with certain bodily states. The global neural mapping is the parallel stimulation of neuronal groups in different areas of the brain. In the words of Martínez [6]:

"A global neuronal mapping ensures the creation of a dynamic circuit that continuously relates our gestures and postures to independent sets of various types of sensory signals".

Whereupon, when a person receives a stimulus from the outside world, his brain associates the acquired information with the position and condition of his body. This process of interpretation constructs cognitive structures that would entail the corresponding knowledge and transformation of reality.

Then, we could affirm, according to Martínez [6], that music, although apparently ambiguous, could be "a plausible mean of communication". In fact, it can be considered as a stimulus that the human body processes and associates to the individual experience that he/she has lived. In this way, Díaz [12] affirms that the individual associates the music that (s)he listens to certain emotions, and that these tend to coincide with the interpretations that the composer and the performer of the piece have. Therefore, these emotions are deliberate. So, Díaz [12] points out that music constitutes a type of language itself, or at least in the communicative sense of the word.

Following Martínez's line [6], this way of structuring music on the brain seems to be based on a level of a categorization called the basic level.

On this point, Zbikowsky [13] establishes the following basic level taxonomy:

| **Superordinate** | **Basic level** | **Subordinate** |
|---|---|---|
| Musical instrument | Guitar | Folk guitar |
| | | Classic guitar |
| | Piano | Grand piano |
| | | Upright piano |

**Table I. Basic level taxonomy by Zbikowsky [13]**

According to Martínez [6], the basic level is the one in which members of the same category have similar forms and aspects. A single mental image is formed for a certain category. It is what allows things to be named with simple names, to be remembered and perceived more easily. However, Martínez [6] points out that the basic level is variable, since it depends on the cultural context and on the level of user experience, as well as whether the categories are natural or artificially created to be analysed. They are also dependent on the way in which the individual shapes the physical world.

In this way, Martínez [6] points to the basic level as the highest level where a mental image can represent a category and, therefore, most of our knowledge.

On the other hand, according to Martínez [6], apart from the basic level, metaphors are the most remarkable cognitive structures by which the individual interprets their experience in the environment. In this way, the metaphor allows us to organise our understanding and to analyse the environment from the concrete to the abstract based on ordered patterns.

In addition, Martínez [6] points out that it has been proved in recent studies that synesthetic perception would be based on knowledge of universal nature of equivalence between different modalities, which means that the individual does not combine shapes arbitrarily and randomly, but rather connects systematically the dimensions of different sensory modalities.

Following Díaz's line [12], the musical emotion probably comes from the initial activation of brain regions that are directly involved in the musical perception and the subsequent activation of emotional systems linked to the sensory perception, as well as of the coherent activation of areas of the cerebral cortex that are involved in the extraction of musical meaning.

Likewise, regarding to the characteristics of music, Martínez [6] affirms that a unique movement can be represented by a pattern that begins with a stable note, moves towards an unstable mote and ends with a stable note, since it is subjected to "the musical forces of gravity, magnetism and inertia".

Thus, stable notes are always accompanied by unstable notes and follow a certain order and

frequency. Therefore, music follows a series of patterns that are repeated throughout the piece of music. The pattern will change depending on where culture comes from, since each civilisation and each epoch has a different musical culture that is reflected in the use of these patterns.

Thus, the emotions and feeling that a person can experience when listening to a song is caused by external factors, such as cultural environment and context when the song is played, and physical factors, like neurological activities. Also, music follows certain patterns that will be based on the culture of the composer. Both neurological activities and the composition of the music do not link randomly feelings and emotions, but they follow an order and a certain structure.

Taking into account the aforementioned, according to José Luis Díaz［13］, in Europe it was already affirmed in the Baroque that the major keys and the fast times represented joy, that the minor keys and the slow times transmitted sadness, or that the dissonances produced anxiety and fear. Díaz［12］ mentions that Marc-Antoine Charpentier proposed a list of seventeen keys that were associated with moods and particular feelings in the seventeen century. Thus, the scale of C major was a "happy and a war music", the E-flat major was "cruel and severe"; the G major was "calmly cheery", and so on. However, following the line of Díaz［12］, music is much more complex, and we do not have to take into account just the keys, but also the harmony and melody, as well as the cultural, individual and environmental variations of the listeners, as it has been discussed before.

The relationship between music and emotions has always been the basement base where composers create their pieces, as it will be seen below. It does not matter the period or the context, every song aims at transmitting some contents.

## Ⅳ. MUSIC AND EMOTIONS IN ANCIENT MUSIC: THE GREEK MODES

In Ancient Greece and India, musical scales intended to transmit different sensations and perceptions. These ways of structuring music are still widely used nowadays. An example of this phenomenon is the Greek modes. Although there are other modes created later, such as the Gregorian modes, based on the principles of the Greek modes.

According to Mara Israel Palacios［3］, the Greek modes could be classified into major and minor, and each one of them transmitted a certain feeling to the listener. Thus, the Greek modes, following Palacios's line［3］, are the following ones:

**-Iorian mode**(**I**): It corresponds to the scale of C major. It is frequently used in the refrains of the pop and rock bands. It aims to convey joy, greatness, harmony and beauty.

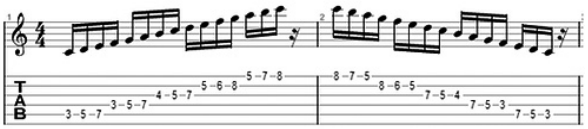

**Fig. 1　Iorian mode by Palacios［3］**

**-Dorian mode**(**II**): It is a minor mode with the major sixth. It includes from D to D. It transmits melancholy and it is dark and soft. According to Jaime Altozano［10］, it is a mode situated in the middle between light and darkness. It can be found in jazz, Celtic music, country and folk, among others.

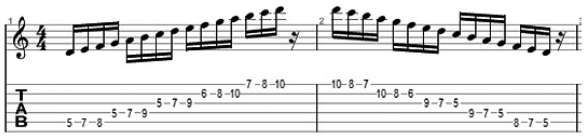

**Fig. 2　Dorian mode by Palacios［3］**

**-Phrygian mode**(**III**): It is also a minor scale with second minor degree. It comprises from E to E. As it is a minor scale, it has melancholic nuances, but it has a more sinister and apocalyptic touch. It can also be identified with oriental sounds. It is usually used in heavy metal themes. Also in Spanish

folclorical music known as flamenco.

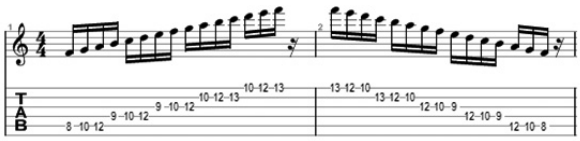

**Fig. 3 Phrygian mode by Palacios [3]**

**-Lydian mode (IV)**: It is a major scale with augmented fouth. It goes from F to F. This mode transmits a dreamy, fantastic and mystical sensation, as well as faith and inspiration. It is usually used in the movie themes.

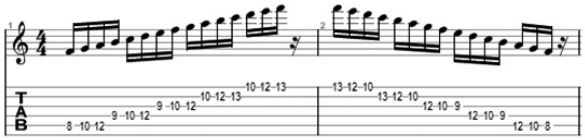

**Fig. 4 Lydian mode by Palacios [3]**

**-Mixolydian mode (V)**: It corresponds to a major scale with seventh minor. It comprises from G to G. It is characterised by a cheerful, youthful, carefree, innocent and happy sound. It is found in rock, hard rock and blues music.

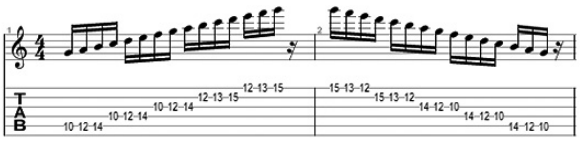

**Fig. 5 Mixolydian mode by Palacios [3]**

**-Aeolian mode (VI)**: It is the natural minor scale, and it is associated, in general, with a sad and melancholic sound. It is usually used as a variation of the Ionian mode. In modern music, the Aeolian mode is in verses and the Ionic mode is in refrains. It is usually used in heavy metal.

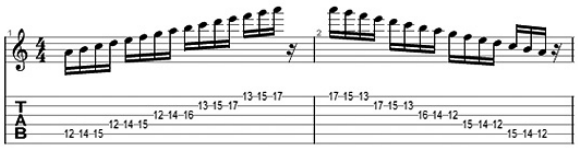

**Fig. 6 Aeolian mode by Palacios [3]**

**-Locrian mode (VII)**: It is a minor scale with the minor second and diminished fifth. It goes from B to B. It is characterised by a depressive, somber and unstable sound. It can be seen in jazz, heavy metal and classical music, as well as in Japanese and Indian music.

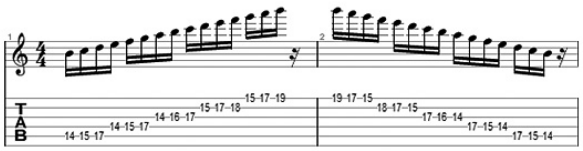

**Fig. 7 Locrian mode by Palacios [3]**

In short, as Altozano [10] affirms, the Iorian, Lydian and Mixolydian modes are the brightest ones, which means, the ones that transmit positive emotions, while the Locrian, Phrygian and the Aeolian modes are the darkest ones, since they transmit melancholic and depressive feelings. The Dorian one is just in the middle between these two sides, because it transmits a soft darkness.

## V. MUSIC AND PEOPLE WITH REDUCED VISIBILITY

According to the experience of Isabel Cristina Bertevelli [5] as a music educator, the musical language is an unique experience for people with reduced visibility, since "[…] the sounds separate and reach their ears, ready to recognize differences of melodies and harmonies, or just to detect some altered emotional state by the tone of voice".

Also, Bertevelli [5] points out that people with reduced visibility are supposed to have exceptional auditory skills, since the deficiency that they suffer obliges them to develop other senses, mainly the ear. Following Bertevelli's line [5], this is due to the fact that most of the spatio-temporal perceptions that they have with the outside world are interpreted through sound.

This is why Bertevelli [5] considers that music education is of vital importance for blind people, since the individual could acquire a greater auditory experience and develop sensitivity and musicality. Therefore, in recent times Braille music has been developed based on the Braille system created in France in 1825 by Louis Braille.

This system consists of six points in relief, organised into cells and distributed in two vertical columns that form sixty-three combinations, with which the literal, phonetic, chemical, computer and musical symbols are presented.

A conventional numbering of each point is established, starting with the column on the left and from the top to the bottom（1, 2 and 3）, and the column on the right（4, 5 and 6）.


**Fig. 8　Conventional numbering points in Braille music by Bertevelli［5］**

On the other hand, the figures are represented by characters constituted by the points 1, 2, 4 and 5, which correspond respectively to the notes C, D, E, F, G, A and B.

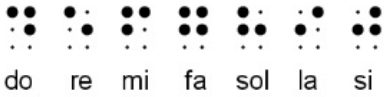


**Fig. 9　Figures in Braille music by Bertevelli［5］**

With this, the figures that determine the value of the notes are represented by combinations of the lower points（3 and 6）within the same cell where the notes are written. These points are combined in several ways to represent the different times that form the musical notes. Some of these representations are the following:

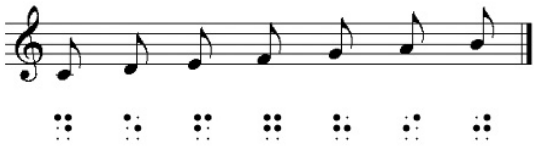

**Fig.10　Quavers in Braille music by Bertevelli［5］**

**Quavers:**

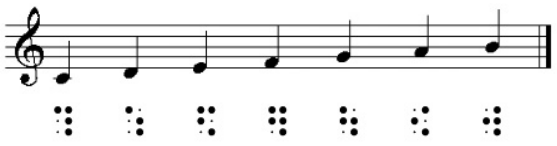

**Fig.11　Crotchets in Braille music by Bertevelli［5］**

**Crotchets:**

**Half notes and demisemiquavers:**

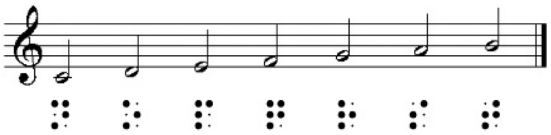

**Fig.12　Half notes and demisemiquavers in Braille music by Bertevelli［5］**

**Whole notes and semiquavers:**

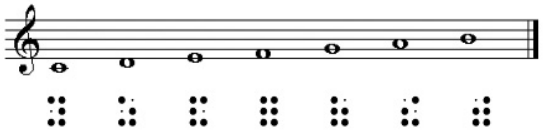

**Fig.13　Whole notes and semiquavers in Braille music by Bertevelli［5］**

This adaptation makes music more accessible to blind people. In fact, it would be an accurate resource to make them express the emotions that they cannot see, as well as develop their capacity of using echolocation in their daily life.

## Ⅵ. ECHOLOCATION

According to Fernando Bermejo, Claudia Arias and other researchers［2］, the information that is acquired through sight can also be acquired through touch or hearing. Following the line of these authors, this can be achieved through the brain plasticity, which means the ability of the brain to modify its own structural and functional organisation.

In this way, Bermejo and Arias［2］point out that the scientific advances of recent times are developing Sensory Substitution Systems（SSSs）to compensate the lack of any of the senses. In addition, Bermejo and Arias［2］affirm that the nature of the human being offers clear examples of simple, efficient and natural SSSs, such as the blind person who reads through the Braille System, since the individual uses the fingertip in movement, called "tactile touch" or "haptic perception", to acquire the information that would be received in a habitual way through vision. Thus, according to these authors, echolocation would be a part of this phenomenon.

Bermejo and Arias［2］argue that the device that

transforms the sensory information is the central nervous system through implicit learning, which means the learning that occurs unconsciously in people who undergo nature training due to particular work or life conditions, like the visual disability. In this way, Bermejo and Arias [2] state the following:

"In echolocation, the action is represented by the exploratory activity that the individual carries out through the self-generation of sounds and movements of head and/or cane […]. Human echolocation is a skill related to the location of reflected sounds that is framed in the area of auditory cognition of nonverbal sounds".

According to Bermejo, Arias and other researchers [2], "echolocation is to locate and recognise biologically relevant secondary sound sources from the direct self-generated direct signal", which means that one is to identify the location of an object by the vibrations that they emit.

Hence, Bermejo and Arias [2] affirm that people with reduced visibility or visually impaired have a slightly different cognitive structure, since the visual cortex, which is located in the occipital lobe, works differently from the one of a sighted person. Recent studies of the University of Southampton showed that people with reduced visibility have the ability to use echolocation, like bats and dolphins, to locate an object and process sounds as a part of their perception from space.

Such study shows that some regions do not require visual experience to develop a specialisation in the processing of spatial information. For this, they examined how sound, especially that of echoes, could help blind people to have a spatial awareness, as well as the possible effects of hearing impairment, and how an optimal use of echolocation could improve independence and quality of life of people with reduced visibility.

In this way, it was found that blind people, even though they did not have any experience in echolocation, had the ability to use the echoes to know where the objects were. Both blind and sighted people have this ability, but in the case of blind people the ability to develop it is higher.

So, each object produces a certain vibration that reaches the ears of the blind person, and they can identify its location. Although a blind person does not have to have developed the capacity of using the echolocation, they could perceive vibrations to identify objects that the sighted people would identify with the sight with a suitable training.

Thus, Bermejo and Arias [2] affirm that two phenomena of fusion could be involved in this modality: the tonal height of the repetition and the preceding effect. The first one occurs every time you hear a sound and its reply after a short period of time. This would occur especially in an object located in front of the person, at the level of his face. In this way, the sound could be determined by the change of tonal of the autogenerated signal, and its characteristics would be extracted from the spectral and spatial indications contained in the merged stimulus. On the other hand, the preceding effect would occur when two similar sounds are presented from different places separated by a short period of time. In this way, the individual would hear only a sound that would locate according to the direction of the sound that came first (leader). The sound that would arrive later (delayed) would correspond with the direct signal and the reflected signal of the echolocation paradigm, respectively.

Relating this phenomenon with the music, according to Jesús Mariano Merino de la Fuente [11], each musical instrument, whether a string, wind or any other instrument, emits vibrations that are, in short, the ones that produce the music itself. For instance, the piano produces two types of vibrations: coupled vibrations, and vertical and horizontal vibrations. These vibrations can be perceived in blind people through the use of echolocation. With this, being perceived with a higher intensity, due to the changes of the configuration of their brain that have already been explained previously,

they would not only locate these instruments, but it would be easier for them to associate these vibrations with feelings, since they would perceive them in a more intense way.

## Ⅶ. MANGA, ANIME AND ACCESIBILITY

Nowadays, some companies are starting to create some products adapted to blind people. An example of this is the online comics store "Comics Empower" [4]. This store produces and obtains comics adapted in audiobook format. Its website is completely adapted to the tools and computer programs designed for blind people. Thus, a sighted person must obtain these tools to access to the web page or request assistance from a blind person.

As for the manga, Japanese volunteers belonging to the Illustrated Braille Club [7], located on the city of Kitajima, in Tokushima prefecture, transcribe both books and manga by authors of different origins. It seems to be aimed above all at a children's audience.

Regarding the anime, audio descriptions are becoming increasingly present in the audiovisual field, although in the case of anime it is still very scarce. An example of this is the American platform Netflix. In this regard, the ACB (American Council of the Blind) [1], has published on its website the series, films and documentaries that offer the option of audio description on Netflix. In 2016, the ACB and Netflix reached an agreement to include the option of audio description in their program, and the number of productions offering this option has increased considerably since then. As reported by the ACB [1], Netflix has added an average of 27 products with audio description per month in 2017.

With respect to the anime, among all those that Netflix offers, those that have the option of audio description are the following:

-*BLAME !* : Audio description in Japanese.
-*Cyborg 009* : Audio description in Japanese.
-*ID-0* : Audio description in Japanese.
-*Ajin* : Audio description in Japanese.
-*Castlevania* : Audio description in English.
-*Glitter Force Doki Doki* : Audio description in English.

All these animes are original Netflix productions. The anime licenses that Netflix has acquired or the oldest animes do not offer the option of audio description. As we can observe, only audio description is available either in English or in Japanese. In none of the cases the audio description is offered in both languages, and there are no audio descriptions of any anime in other language, such as in Spanish or French, for example. Therefore, we can affirm that Netflix is very committed to the cause in terms of their original productions, but with respect to the anime, there is still much work to be done, although the advances are quite noticeable.

## Ⅷ. *SHINGEKI NO KYOJIN* (*ATTACK ON TITAN*)

The story takes place in a fictional medieval era. The plot is about the invasion of monstrous titans to the wall Maria, where humans had lived away from the titans for a century. Eren Jaeger, Mikasa Ackerman and Armin Arlert, inseparable childhood friends, look with horror and helplessness how they lose everything as a result of these events and join the legion of recognition to confront the titans, take the invaded territory back and avenge the death of their beloved family and friends.

The reasons why this anime was chosen was due to its high popularity in Spain and worldwide, and its third season had come out in July 2018. This anime is on Netflix, but it does not have any audio description available. On the other hand, the songs of its openings are also very popular and catchy. Therefore, it could be a good resource to attract new followers and encourage other users to watch anime or to read manga. Neither

its manga nor its anime are adapted for blind people.

In this article, the reduced versions of the themes, which means the fragments of the songs that appear in the openings, have been used for analysis. Also, to carry out the brief musical analysis that follows, an interview was conducted with Isabel Barbudo Ortega, a student at the Superior Music Conservatory of Málaga.

### *A. First opening song*

The song is titled "Feuerroter Pfeil und Bogen" in German, or "Guren no Yumiya" in Japanese, which means "Crimson Bow and Arrow". It appears from the episode 1 to 13 of the first season. Its lyrics are in Japanese except the first two verses, which are in German ("Seid ihr das Essen ? /Nein, wir sind der Jäger"), referring to the main character of this anime, Eren Jaeger. The three songs are composed and played by the J-rock band Linked Horizon.

According to Barbudo Ortega [8], the song begins at C Sharp minor, continues at B minor, changes to G Sharp minor, returns to C Sharp minor, and ends in G natural. As we can see, the use of minor chords abounds. Following the line of Barbudo Ortega [8], the use of G minor could also be translated as an alternation between the G sharp Aeolian and the E Lydian mode. Barbudo Ortega [8] also suggests that, in what we might consider as the chorus, a G sharp Phrygian is introduced. The character of the song is almost circular, since it begins and ends in the same chord, although several changes of modulation take place throughout the piece, and the structure has an introduction, a development and, finally, a conclusion.

Therefore, taking into account the modulations and chords used, this song bursts with a melancholic, fantastic, epic, sinister and apocalyptic character.

### *B. Second opening song*

It corresponds to episodes 14 to 25 of the first season. It is titled "Die Flügel der Freiheit" in German, or "Jiyuu no Tsubasa", which means "Wings of Freedom". Its lyrics are in German and in Japanese. According to Altozano [9], this theme is on a scale in C major with question and answer, and a small harmonic change between them.

According to Barbudo Ortega [8], the theme song performs a chorus introduction to capela in C major, giving, in this way, a sense of praise, although the character of the song changes completely later, becoming a very marked rhythm by quavers and an instrumentation of guitars and other metal instruments. This instrumentation occurs in A minor, and it changes to a F sharp minor. This alteration can be interpreted as a F sharp Phrygian.

Regarding the question and the answer mentioned above, Barbudo Ortega [8] points out that, both in the question and in the answer; the protagonist is the voice, while the instrumentation is an accompaniment with rhythms of very strong quavers, and where the instrumentation is in harmony. In both cases, sections and rhythmic fragments appear. They serve to create tension and to break the repetition that occurs along the song.

As in the first opening, Barbudo Ortega [8] emphasizes that the song culminates with a re-exhibition of the first fragment, although in a non-decisive cadence. It gives the theme the circular character mentioned above, with an introduction, development and conclusion.

Taking into account all the aforementioned, this song acquires a tense, epic and melancholic nuance, and has a patriotic character, remembering a hymn, especially in the first part of the song.

### *C. Third opening song*

It introduces the episodes of the second season. It is titled "Opfert eure Herzen ! " in German, or "Shinzou wo Sasageyo" in Japanese, which means "Dedicate your Hearts ! ". Its lyrics are in Japanese.

According to Barbudo Ortega [8], the song begins in a C major chord, and this is followed by chords in F sharp minor, A minor and E flat major and minor.

It is also characterised by the importance given to the voice with respect to the instrumentation, although it becomes more intense and richer as the song progresses.

Taking into account the abundance of minor chords of the song, we could consider that the theme has a melancholic, dark, epic and greatness character.

In short, considering all these characteristics, the three songs have an epic character due to their modulations and structure. In all three cases, an introduction, a development and a conclusion are proposed, re-exposing, at times, some parts of the song that has appeared previously. According to Barbudo Ortega［8］, what gives the epic character to the songs are the secondary dominants and the constant modulations, which create tension that accumulate until they resolve it in the climax of the fragment or the song. Following the line of Barbudo Ortega［8］, these are very tonal songs, where there is an abundant use of the Aeolian and the Ionic mode, although the introduction of modes such as the Phrygian and the Lydia ones gives the themes songs a great harmony and a particular sonority. Thus, Barbudo Ortega［8］ concludes that these songs work well, because they use the instrumentation in different ways in each one of them.

## Ⅸ. PURPOSE

The main purpose of the following study is to examine if the opening song of a series（in this case, a well-known anime）can transmit some emotion to a blind person, and if they can capture the essence of the story by just listening to these songs, and using their auditory capacities, such as echolocation. In this way, it will be possible to discuss whether music plays an important role in the story of an anime or if it only complements the image and could be substituted by any other song.

Likewise, it is also intended to observe if blind people are familiar with this type of series or if they do not know them or have or had not the opportunity to do.

Finally, it will be possible to investigate if the users would be interested in anime if these were audio-written or adapted in some way to their needs. It is also important to note that the current study aims at providing some preliminary descriptive data on those topics.

## Ⅹ. METHODS

A study was carried out with a total of 18 blind users between 12 and 15 years old in Malaga（Spain）. People of these ages were selected because, as Frith［14］said, it is the age where music begins to be a way of expression of emotions and they can reach where words do not. In addition, it is a period where anime begins to gain popularity among people and when they become followers of the adventures that occur in this type of series.

First, users were told that they would listen to the three songs of the opening of *Shingeki no Kyojin* and then they would answer some questions. Once the song was played, the questions were asked.

The questionnaire comprised a total of 6 questions. In the first one, they were asked what they thought about the song.

In the second, they were asked what the song had transmitted to them. To make the task easier for the users, they were given some examples of feelings and sensations that they could experience with the song, and they also had the possibility of adding other ones. These keywords were chosen based on the ones presented by Martínez［6］. The keywords that served as example were: fear, war, chaos, violence, destruction, patriotism, anger, hope, fire and friendship. These words were chosen based on the plot of this anime and the topics that are treated in the story.

The third question was addressed to those who knew or had heard about the series. They were asked what the song transmitted to them taking into account the

information that they have about this anime and if they consider it an appropriate introductory song for this anime and why.

In the fourth question, they were asked what this anime might be about, considering the nature of the song. For those who knew the series, they were asked to tell the story from their point of view.

Before formulating the fifth question, the plot of the anime was revealed to the users. After this, they were asked if they could have imagined this argument just by listening to the intro song or if they would have imagined something else and why.

Finally, they were asked if they would follow this anime, if they think they would like it and why.

## XI. RESULTS AND DISCUSSION

On each of the songs, the following results were obtained:

### *A. Guren no Yumiya*

Most of the users agreed that it was a song that had a lot of energy and strength. They highlighted the fast rhythm of the song and the abundance of instruments used with respect to the voice. The song gave them hope and struggle, and most of them found it stressful and chaotic. Some of them even said that it gave them a headache.

Regarding what they thought this anime could be about, their answers were very diverse, but all users, without exception, agreed that it was about war, fights, battles, adventures, destruction and violence. Some of them also pointed out some elements, such as friendship and pride, as well as the use of weapons, like swords. This use of swords is a very remarkable point, if we take into account the characteristics of this anime.

Finally, in relation to the question of what this song had transmitted them, the following results were obtained:

| | | | |
|---|---|---|---|
| **Destruction** | 16(89%) | **Curiosity** | 2(11%) |
| **War** | 13(72%) | **Nervousness** | 1( 6%) |
| **Fire** | 9(50%) | **Adventures** | 1( 6%) |
| **Fear** | 4(22%) | **Freedom** | 1( 6%) |
| **Stress** | 2(11%) | **Self-confidence** | 1( 6%) |
| **Chaos** | 14(78%) | **Fight** | 1( 6%) |
| **Hope** | 6(33%) | **Unexpected** | 1( 6%) |
| **Anger** | 11(61%) | **Suspiciousness** | 1( 6%) |
| **Friendship** | 3(17%) | **Pain** | 1( 6%) |
| **Violence** | 6(33%) | **Discomfort** | 1( 6%) |
| **Patriotism** | 2(11%) | **Effusiveness** | 1( 6%) |
| **Musical** | 1( 6%) | **Impulsiveness** | 1( 6%) |
| **Orchestra** | 1( 6%) | **Attraction** | 1( 6%) |

**Table II. Frequencies and percentages of each feelings and emotions reported in *Guren no Yumiya* (N=18)**

As can be seen, the most remarkable element by the users was destruction (89%), followed by chaos (78%), war (72%) and anger (61%). They also highlighted elements such as fire (50%), hope (33%), violence (33%) and fear (22%).

### *B. Jiyuu no Tsubasa*

The opinions about this song were not focused so much on war, as the previous one. Users emphasized the slow rhythm of the beginning that becomes more accelerated later. The great majority of them pointed out that it looked like a hymn, comparing it even with the hymn of Spain. They highlighted patriotism, hope, friendship and the desire for victory as main exponents of the song.

Also, they considered that it was much less "noisy" than the previous song, and they emphasized that, in this case, music acquired more importance than lyrics, as Barbudo Ortega said in her analysis of this theme song. In addition, some users said that, when listening to the song, they felt that they were "flying", which is very striking, considering the characteristics of the story.

Regarding what they thought the anime could be about, although the answers continued to be very different, pointing out that the series could be about

sport or corrupted politicians, in all cases, users highlighted that there was a war where the protagonists were fighting for defending their territory and that they were very patriotic. They claimed that this anime could deal with topics such as friendship, victory, adventures and it transmitted a strong patriotic feeling.

Taking into account these answers, it could be said that users were getting closer to the nature of the series, and that they deduced with great accuracy the character of the story and the basic elements that appeared in the plot by just listening to its opening theme songs.

As for the feelings and sensations transmitted to them by the song, the results obtained were the following:

| | | | |
|---|---|---|---|
| **Hope** | 13(72%) | **Attraction** | 1( 6%) |
| **Fire** | 5(28%) | **Joy** | 3(17%) |
| **Anger** | 6(33%) | **Loyalty** | 1( 6%) |
| **Chaos** | 5(28%) | **Madness** | 1( 6%) |
| **Friendship** | 8(45%) | **Fight** | 1( 6%) |
| **Patriotism** | 11(61%) | **Peace** | 1( 6%) |
| **War** | 6(33%) | **Faithfulness** | 1( 6%) |
| **Destruction** | 3(17%) | **Happiness** | 1( 6%) |
| **Violence** | 4(22%) | **Freedom** | 1( 6%) |
| **Fear** | 3(17%) | **Unexpected** | 1( 6%) |
| **Stress** | 1( 6%) | **Funny** | 1( 6%) |
| **Importance** | 1( 6%) | | |
| **Impulsiveness** | 1( 6%) | | |

**Table III. Frequencies and percentages of each feelings and emotions reported in *Jiyuu no Tsubasa* (N= 18)**

According to these results, destruction has obtained a very low percentage (17%), giving way to hope (72%), patriotism (61%) and friendship (45%). As it can be observed, this theme song highlighted concepts that in the previous songs were not underlined. This is probably a deliberated action by the composer, since they adapt the theme song depending on how the plot unfolds.

### *C. Shinzou wo Sasageyo*

In this case, users agreed almost entirely that this song was the quietest one of all. It reportedly conveyed a sense of joy, fun, adventures and motivation. They also point out that it could be seen that the characters were not having a good time, and that they have to fight to recover what belongs to them, it was the song that users liked the most.

As for what the series could be about, users agreed that it could be a series of adventures, where monsters destroy the city and very patriotic heroes fight against them. In addition, they pointed out that this song transmitted fear and hope in equal parts, which was very confusing for them. They highlighted the friendship, mystery and intrigue as remarkable elements of the series, and the song transmitted them the feeling of being flying, which is something quite noteworthy, taking into account the story of this anime.

With respect to the feelings and sensations that the song has transmitted to them, the results obtained have been as follows:

| | | | |
|---|---|---|---|
| **Friendship** | 9(50%) | **Nervousness** | 1( 6%) |
| **Hope** | 15(83%) | **Weird** | 1( 6%) |
| **Patriotism** | 6(33%) | **Fight** | 1( 6%) |
| **Fear** | 2(11%) | **Revolution** | 1( 6%) |
| **Anger** | 8(45%) | **Love** | 2(11%) |
| **Fire** | 7(39%) | **Happiness** | 1( 6%) |
| **War** | 6(33%) | **Reconciliation** | 1( 6%) |
| **Violence** | 3(17%) | **Robots** | 1( 6%) |
| **Chaos** | 7(39%) | **Joy** | 1( 6%) |
| **Destruction** | 3(17%) | **Impulsiveness** | 1( 6%) |
| **Serenity** | 5(28%) | | |

**Table IV. Frequencies and percentages of each feelings and emotions reported in Shinzou wo Sasageyo (N= 18)**

As with the second opening, hope (83%) is the most significant feeling on the part of the user when listening to this song, followed by friendship (50%) and anger (45%).

After the reproduction of the three songs, the users were asked if they would have imagined the plot of this anime by just listening to its songs or if, on the contrary, they would have imagined another story. The results were very similar, since 56 percent of the users recognised that they would not have imagined the plot

and that they had imagined something completely different. These users imagined that the series would be about battles and war, but not against monsters, but against human beings. Instead, 45 percent of the users imagined that the plot would be about war and destruction, and that the series would probably have fantastic touches.

Finally, regarding to the question of whether they would follow the series and if they would like it, the answers were also very even: 45 percent of the users say that they would follow the anime and that they would probably like it, since they find the story of this anime interesting and fun. On the other hand, 45 percent users said they would not follow it, and 11 percent of them said that they did not know. However, of the users that said no, 33 percent of them recognised that they were not sure if they would like it or not.

As it can be seen, users have been able to deduce the story presented in *Shingeki no Kyojin* in general terms by just listening to their opening songs. Although they did not feel capable of going into the details about the specific characteristics of the story, they have been able to capture the key elements that appear in the anime, such as destruction, friendship, patriotism and war. Depending on the characteristics of the song, some keywords stood out more than others. Thus, while the first song featured destruction and chaos as the main exponents of the series, the second and third one highlighted hope, patriotism and friendship. Therefore, even if it is the same series, each song uses different chords and melodies depending on how the plot is developing at that time, and people with reduced visibility can capture these characteristics without having to see the image.

## Ⅻ. CONCLUSION

In this article, theoretical analysis on music, expression of emotions, and echolocation was first conducted. Music has been considered as a tool to express emotions, and for people with reduced visibility it is an indispensable element to understand the plot of anime, in the absence of an audio description. Second, the preliminary descriptive study on the three openings of the anime *Shingeki no Kyojin* explored the user's experiences related to their thoughts about the anime, as well as their feelings when listening to these songs. It was discussed that users could generally identify the plot of the story and their perceptions corresponded to what the songs should transmit, taking into account its chords and harmonies.

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