

# THE MELODIC "HOOK"

An Investigative Study into the  
Melodic 'Hook' Device and its  
Construction and Application in  
Contemporary Western Popular Songs

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# IDENTIFICATION OF TOPIC AREA

## **Title**

The melodic 'hook'.

An investigative study into the melodic 'hook' device and its construction and application in contemporary western popular songs.

## **Project Advisor**

Paul Edwards will be an ideal advisor for this project due to his wealth of knowledge in music theory, music composition and music psychology. Research related concepts such as melodic contour, melodic expectancy and melodic similarities are quite complex areas of study and he's broad experience within these fields should provide clarity on any abstract ideas that may be difficult to comprehend during the research process.

## **Introduction**

A well written and well executed melodic 'hook' is able to persist in the consciousness of the listener long after they have heard a particular song. Such are the benefits of this phenomena that it has been a key musical device utilised by song writers and musicians throughout Western music's formative history. Knowing how these 'sticky' elements are constructed and how best to employ them will equip the contemporary song writer with initial foundations for memorable compositions and ultimately develop keen foresight in recognising the potential for a song's success in the popular domain.

An investigative study into melodic 'hooks' will be conducted via mixed methodology in six phases. These phases will include a group of participants involved in identifying melodic 'hooks' from an initial sample set of contemporary western popular songs. The results will be documented through a combination of questionnaires and follow up interviews. These collection of sampled melodic 'hooks' will then be quantifiably analysed for common musical characteristics, traits and behaviour. A melodic 'hook' application process will then be carried out implementing the analysis findings into a set of original song compositions, produced as an eight track album. Finally, another round of interviews will be conducted to measure the success of implementation.

## Study Objectives

There are two primary objectives for this project. The *first* is to dissect the construct of melodic 'hooks' and establish common characteristics, variables and behaviours to quantify questions such as (but may not necessarily be limited to):

- I. **Are there similarities in the melodic contour of melodic 'hooks'?** Do they have an ascending-descending pattern, or vice-versa? Do they move in stepwise succession or in disjunct intervals?
- II. **What is the general length of a melodic 'hook' (in beats and bars)?** Are they contained within one measure or do they span several bars? Do they occupy the whole bar or only take up portions of a bar?
- III. **How does rhythm affect the quality of a melodic 'hook'?** How long are each note sustained? Are they often performed or notated in *staccato* or *legato*?
- IV. **How are melodic 'hooks' phrased if associated with lyrics?** Are they complete phrases? Or do they only cover a portion of a phrase? Are they usually *melismatic* or *syllabic*?
- V. **How are melodic 'hooks' generally accented?** Do they often begin on a downbeat or on an upbeat?
- VI. **Where are melodic 'hooks' generally located within the song structure?** Are they predominantly found in verses or choruses? Are they usually found at the beginning or at the end of *stanzas*?
- VII. **How often are melodic 'hooks' repeated?** What is the average rate of repetition? Do they usually occur more than once per stanza or more than once per composition or both?

The *second* objective for this project is to successfully implement and execute melodic 'hooks' in original song compositions to be able to qualify questions such as (but may not necessarily be limited to):

- I. **How does an individual identify which passages or sections of a song constitute a melodic 'hook'?**  
Do individuals have differing notions of what a melodic 'hook' constitute? Or are there general expectancies with memorable melodies that make it relatively simple in identifying a 'hook'? Are there common reasons and rationales when establishing melodic 'hooks'?
- II. **How does repetition affect melodic 'hook' identification?** Is it more 'catchy' if its repeated more than once within the song structure? Or does hearing the entirety of the song several times also improve memory retention for listeners?
- III. **How does the familiarity or unfamiliarity of a song affect melodic 'hook' identification?** Are melodic 'hooks' harder to discern if a song is unfamiliar?
- IV. **Once identified, how easy is it to recall a particular melodic 'hook'?** How long does it usually remain in an individual's mind after ceasing to listen to a song?
- V. **Does being able to identify and recollect a melodic 'hook' affect an individual's liking for a particular song?**  
Do they tend to like a song more if they can recollect some aspect or portion of it?
- VI. **What effects does the persistent nature of melodic 'hooks' have on an individual?** Is the experience one of discomfort or is the phenomena always a welcome occurrence?

## Study Aims

As with the study objectives, there are two main aims for this study. The *first* is to be able to accurately identify common musical traits, patterns and behaviours of melodic 'hooks' in contemporary western popular songs. This study will conduct research on relevant factors such as (but may not necessarily be limited to):

- I. **Similarities in melodic contour of melodic 'hooks'**. To determine common ascending and descending patterns and common interval behaviours (movement of a *conjunct* or *disjunct* nature).
- II. **General length in beats and bars of melodic 'hooks'**. To assess general length in musical beats and bars and their span ratios within a bar.
- III. **Rhythmic tendencies of melodic 'hooks'**. To identify general length of notes and rests and any preference for *staccato* or *legato* expressions.
- IV. **General phrasing of melodic 'hooks'**. To determine whether melodic 'hooks' are generally expressed as whole phrases or only portions of a phrase and to determine whether word units are *melismatic* or *syllabic* in nature.
- V. **General accent placements of melodic 'hooks'**. To determine whether melodic 'hooks' usually begin on an upbeat or downbeat.
- VI. **General location within song structure of melodic 'hooks'**. To identify which sections of a song melodic 'hooks' are predominantly found.
- VII. **Rate of repetition of melodic 'hooks'**. To establish repetition patterns in relation to song structure position.

The *second* aim of this study is to develop skills in melodic 'hook' application for contemporary song compositions. Application methods will be formulated from research results conducted in topics such as (but may not necessarily be limited to):

- I. **Identification of a melodic 'hook'**. To ascertain what factors aid the listener in identifying melodic 'hooks'.
- II. **Repetition of a melodic 'hook'**. To determine how to utilise compositional repetition within the song structure to maximise retention for a melodic 'hook'.
- III. **Melodic expectation of a melodic 'hook'**. To successfully utilise the concept of *melodic expectancy* to immediately familiarise the listener to a melodic 'hook'.
- IV. **Recollection and retention of a melodic 'hook'**. To identify factors that maximise a melodic 'hook's' persistence and memorability.
- V. **Melodic 'hooks' affect on song disposition**. To determine whether there is a correlation between a memorable melodic 'hook' and an individual's liking or disliking toward a particular song.
- VI. **Reactions to the persistent nature of a melodic 'hook's in one's consciousness**. To determine the general emotional reactions to the persistent nature of a melodic 'hook'.

# BACKGROUND INFORMATION

## Western Popular Music Culture

From its roots in the amphitheatres of ancient Greece and the coliseums of the Great Roman empire (Forney & Machlis 2007, p.70), to its formal emergence during the medieval era, Western music have always depicted *common* ideas of life, love, humour, freedom and war. These *common* musical concepts were known as *secular* music, separate from *sacred* music or church music (Crickmore, 2003) and were performed and propagated by aristocratic poet-musicians, the *troubadours* and *trouverses* in France, the *minnesingers* in Germany and the *jongleurs* (the wandering minstrels) of the countryside. They sang and performed about everyday aspects of medieval life, usually in the local vernacular and usually in simple musical formats such as *strophic* form (repeated melody sequences for every stanza of the song) (Forney & Machlis, 2007, p.85-87). Because of its simplistic nature, the general masses were able to digest, reinterpret and integrate these secular songs into their unique cultures with certain ease. This marked the beginnings of western popular music culture.

## Defining Contemporary Popular Music

These secular music gradually evolved and changed along with history's often tumultuous landscape, responding to the current political, economical, philosophical, sociological and cultural influences that pervaded each era e.g. Baroque, Classical, Romantic, Nationalism etc. Through this reactive process, popular musical genres and styles continued to develop and diversify throughout western music's colourful history and still continue to do so in today's modern society, which brings us to the formidable task of proffering a definition for 'contemporary' popular music for this research project. Sernoe (2005) states that this task is made difficult by the smorgasbord of musical styles and genres on offer by way of efficient, immediate and accessible electronic mediums available to the general public. To arrive at a singular definition of 'contemporary popular music' may be an exercise best reserved for musicologists and disciplinarians of popular music studies. Instead, a simpler working definition is offered to adequately sustain the smaller scope of this project - a definition which runs a similar vein to Morrison's 2007 description of popular music as "...belonging to any number of musical styles that are accessible to the general public and distributed commercially." From this point onwards, a common denominator of 'commercial' availability, accessibility and viability will be used as a general gauge or measure for defining 'contemporary popular music'.

## The Melodic 'Hook' as a Musical Device

From the simple strophic song forms of the medieval era to the predictable verse-chorus formats of today's popular songs, simple musical *devices* e.g. ostinato, imitation, inversion, ornamentation, etc., (Solomon, 2002) have long been implemented by composers and songwriters to engage the attention of their listeners. One such common modern musical device is the melodic 'hook'. A 'hook' is usually the part of a composition (mainly in song form) that a listener can easily identify and recall. In today's competitive multi-platform music industry, a 'hook' can be a commercially viable device used to keep the interest and focus of the listener, functioning as a point of memorable reference for the song (Braheny, 2006, p.93). Kasha and Hirschhorn (as cited in Burns, 1987) specifies that a 'hook' should contain at least one of the following three features - "...a driving, danceable rhythm...a melody that stays in people's minds [and] a lyric that furthers the dramatic action, or defines a person or place." Burns then goes on to define fourteen classifications of 'hooks' within two major groupings, *textual* which include *lyrical* and *musical* elements and *non-textual* which include *performance* and *production* elements (Appendix 1). For this project, a specific focus on *melodic* 'hooks', as defined by Burns, will serve as the core foundation for this study.

# APPROACHES AND METHODOLOGY

## Introduction

This investigation will be divided into six phases, which includes a population sampling phase, a song sampling phase, a questionnaire and assessment phase, an interview phase, a statistical analysis phase and a final evaluation and measurement phase. The following section provide details for each of these phases.

## Population Sampling Phase

The first task for this project involves determining a sample criteria for participants to represent a cross-section of a predefined population. The participants will be involved in two rounds of a process primarily designed to identify melodic 'hooks' from a given sample set of contemporary popular songs. With the small scope of this project in mind, the proposed definition for the sample population will be based on a *single* stage, *nonprobability* (convenience) sampling procedure (Babbie as cited in Creswell, 2009) where all the chosen participants will be known and approached directly by the researcher for the immediate purposes of practicality, efficiency and attainability. The following specifies three main general definitions and *stratification* criteria for the population sample:

- I. **Australian (Melbourne City) resident.** The process will only focus on local residents currently living in Melbourne, Australia, for the purposes of viability and feasibility.
- II. **18 - 50 yrs of age.** This is broken into subdivisions of 18-21, 22-30, 31-40 and 41-50, with each subgroup containing equal number of participants. These subgroups reflect 'milestone' years with the assumption that each group will inherently consist unique identifiable cultural, sociological and political determinants that may influence certain aspects of the data collection phase.
- III. **Equal male and female.** To represent an equal proportion of gender within each subgroup of the population.

The population is then further defined into three main categories:

- I. **Music Oriented (MUSO).** Participants in this category will have extensive experience in musical based knowledge and are currently involved within the music industry in the broadest of sense e.g. guitarist, bassist, pianist, vocalist, songwriter, composer, conductor, music theory lecturer, etc.,
- II. **Audio Production Practitioners (APP).** Participants in this category are involved in the audio production field and have proficient knowledge in sound theory and audio production, e.g. recording engineer, mixing engineer, live sound engineer, music producer, etc.,
- III. **General Public (GP).** Participants in this category are individuals that have neither in-depth musical knowledge or abilities and is neither involved in the audio industry. They must however present a strong interest in listening to music as a hobby or pastime.

In considering the limited scope and tight schedule of this project, only one respondent per stratum will be sampled allowing for a total of 24 participants who will be involved in the melodic 'hook' extraction process. This accounts for twelve males and twelve females with eight in each main category of MUSO, APP and GP. A table (Appendix 3) has been designed to further illustrate the spread of the participants according to the proposed criteria above .

## Songs Sampling Phase

The next sampling process involves selecting ten contemporary popular songs for the purposes of melodic 'hook' extraction. Since the sampled participants are limited to only include local residents, the main song selection criteria must be based on its accessibility in the local market. Therefore all the songs selected are sourced from the official Top 100 chart of the Australian Recording Industry Association (ARIA) available at <http://www.aria.com.au/home.htm>.

Due to the small scale of this project only the top selling single from each year dating back from 2012 will be considered in the sampling process.

- I. **2011.** *Party Rock Anthem* by LMFAO Feat Lauren Bennet & Goon Rock.
- II. **2010.** *Love The Way You Lie* by Eminem feat. Rihanna.
- III. **2009.** *Gotta Feeling* by The Black Eyed Peas.
- IV. **2008.** *Low* by Flo Rida feat. T-Pain.
- V. **2007.** *Big Girls don't Cry* by Fergie.
- VI. **2006.** *I Wish I was a Punk Rocker (With Flowers in my Hair)* by Sandi Thom.
- VII. **2005.** *The Prayer* by Anthony Callea.
- VIII. **2004.** *What About Me* by Shannon Noll.
- IX. **2003.** *Angels Brought Me Here* by Guy Sebastian.
- X. **2002.** *Without Me* by Eminem.

These selection of songs will be made accessible to the participants via a CD or through a customisable online musical playlists such as **Playlist.com** or **FineTune.com**. Participants will be given a maximum of five days to listen to each track. A take-home questionnaire will also be required to be completed during this interim period which will be collected during a follow-up interview to be conducted after the five day listening period.

## Questionnaire Phase

A data collection procedure will be implemented for the initial extraction process of melodic 'hooks' from existing contemporary songs. The purpose is to determine key musical factors that directly influence how a population perform such melodic 'hook' identification tasks. This will constitute a questionnaire and follow-up interview. The questionnaire will be divided into two sections:

- I. **General questions.** These are general information that is relevant across the population spectrum. This includes data such as age, birth of date, sex, etc. This section will also include questions pertaining to the participant's music listening behaviour. E.g. *How* do they usually listen to music? *What* type of music do they usually listen to? *Who* are their favourite artists/musicians/bands? *Why* do they listen to music?
- II. **Independent questions.** These are questions specific to the three main groups of MUSO, APP & GP. E.g. *What* kind of an instrument does the MUSO participant usually perform or play? *What* type of music does the APP participant usually produce or mix? *What* is the GP participant's main profession?

The questionnaires will be administered via a take home printed copy or via an online survey website such as **SurveyMonkey.com** or **SurveyGizmo.com**. The participants are required to complete the questionnaire within the five day listening period and bring it with them to the follow-up interview session.

## Interview Phase

The follow-up interview will be of a *structured* nature (Berger, 2000), where a specific set of questions will guide the flow of the session. The recording medium will be a combination of written notes and audio taping. Certain commencement procedures are noted including obtaining an initial permission from the participant to be involved in the process and leaving with a signed 'informed consent' after the interview (Bertrand & Hughes, 2005).

Interview questions will be uniform across the three main groups and is divided into two sections. The first part will be designed to immediately assess whether the participants were able to find a melodic 'hook' within each of the songs. This section may include questions such as (but may not necessarily be limited to):

- I. **Have you heard of any of the songs prior to this process?** This determines whether there will be any bias with familiar songs as opposed to unfamiliar songs.
- II. **In your opinion which song is the most 'catchy' or memorable?** This question determines any preferential bias by the participant. This may or may not be a direct consequence from their answer to question one.
- III. **Which part or parts for each song did you find most memorable?** This question is to determine whether the participants were able to identify one or more melodic 'hooks' within each individual song.
- IV. **Why do you think these specific musical passages persisted in your memory?** This question is to assess key rationalisations and methodology for establishing a melodic 'hook' in contemporary popular songs.

The second part will include probing questions into the participant's opinion and knowledge of 'popular' music and their prior knowledge of the concept of melodic 'hooks'. This section may include questions such as (but are not necessarily limited to):

- I. **How do you define 'popular' music?** This question is to assess their definition of 'popular' music.
- II. **Do you listen to 'popular' music?** This question assesses their predetermined bias toward 'popular' music.
- III. **How do you define a melodic 'hook'?** This question assesses their knowledge with the terminology.
- IV. **Do you experience snippets of songs stuck in your head for a lengthy period of time?** This question will assess if they are susceptible to the 'hook' phenomena.
- V. **How do you generally feel when this occurs?** This question assesses the emotional reaction of the participant to having a persistent melodic 'hook' stuck in their consciousness.

The resulting melodic 'hooks' identified in this interview process will constitute the sample set that will be statistically analysed using quantitative methodologies.

## Statistical Analysis Phase

The next phase involves quantifying the extracted sample of melodic 'hooks' from the interview process. Several research studies have already been conducted in the topics of melodic contour structures (Schmuckler, 2010), melodic perception (Temperley, 2008), contextual similarities (Bregman & Eerola, 2007) and tonal predictability (Berry, 2006). Cuddy (1982) ran simple experiments to "analyze the perceptual and cognitive capabilities of the listener that allow him or her to hear and to appreciate...music." These research investigations were designed to determine connections between melodic contouring, melodic structure integrity, perceived melodic consonance and acquired preferences for certain melodic excerpts.

Mercer-Taylor (1999) studied two song extracts separated by two and a half centuries, which had strong resemblance in its composition methodology. The first was Claudin de Sermisy's "Au joly boys", published in 1530 and the second is the middle eight section from Johnny Marks's "Holly Jolly Christmas" composed for the 1964 film Rudolph, the Red Nosed Reindeer. Mercer-Taylor found that "in both cases...a descending chain of interlocking melodic thirds - six in the first example, five (roughly) in the second" is found in the "melodic detail". Each passage then "breaks from this chain into a cadential gesture characteristic of its century, though even these resemble one another in their step-wise ascents."

Established research such as Mercer-Taylor's and that of others mentioned above, will be this project's main source of reference for analysis instrumentation, borrowing techniques and methods of analysis within their procedures and processes. For the small scope of this project the tests will be narrowed down to *five* determinant factors:

- I. **Deviation from starting pitch.** This quantifies and plots the melodic 'hook's *melodic* contour (Appendix 4).
- II. **Deviation from tonal centre.** This quantifies and plots the melodic 'hook's *tonal* contour.
- III. **Deviation from adjacent notes.** This quantifies and plots the melodic 'hook's *interval* contour.
- IV. **Rhythmic patterns and behaviours.** This quantifies and plots the melodic 'hook's *rhythmic* pattern.
- V. **Repetition location and repetition rate.** This quantifies and plots the melodic 'hook's repetition location both within song sections and within the compositional structure and how often this repeats occur.

The findings from this analytical phase will then determine the key attributes of the melodic 'hooks' that will be strategically applied in a set of eight original song compositions produced as an album.

## Evaluation and Measurement Phase

The final phase of this project is to evaluate and measure the success of the construction and implementation of melodic 'hooks' in the context of original song compositions. This involves similar data gathering methodology with the same group of participants from the initial data gathering process. Again, they will be asked to take home a copy of a sample set of songs, for which, in this round will be the finished eight original song compositions. They will be given a total of ten days to listen to the material, giving them ample time to develop some form of familiarity to the tracks. At the end of the ten days a similar interview process will be conducted specifically aimed towards the participant's ability in identifying the strategically implemented melodic 'hooks' for each song. This may include questions such as (but may not necessarily be limited to):

- I. **In your opinion which song is the most catchy?** This question determines whether an individual composition was more successful at being memorable.
- II. **Which part or parts of each song do you believe is a melodic 'hook'?** This question is to determine whether the participants were able to identify a single or multiple melodic 'hooks' within each song.
- III. **Why do you think these specific musical passages persisted in your memory?** This question is to assess their key reasons for establishing a melodic 'hook' within the context of largely unfamiliar songs.
- IV. **Did you find this melodic 'hook' identification exercise easier or harder compared with the first melodic 'hook' identification process?** This is to compare the participant's experiences with attempting to identify melodic 'hooks' with largely unfamiliar compositions versus commercially distributed popular songs.

The findings from this set of interviews will be analysed and measured with the purpose of establishing whether the strategically implemented melodic 'hooks' were correctly identified by the participants.

## Procedure Summary

Below is a brief summary of the approaches and methodology procedure to be undertaken for this project.

- I. Sample a group of participants according to the set stratification and categorical criteria.
- II. Sample ten top selling hit singles according to the ARIA Top 100 charts from each year prior 2012.
- III. Present these songs to the participants for an assessment period of five days along with a questionnaire.
- IV. After the five days, participants are to be interviewed to determine if any melodic 'hooks' were identified from the sample set of popular songs.
- V. All the identified melodic 'hook's will then be quantifiably analysed for certain musical traits and behaviours.
- VI. Findings from these analysis are to be implemented in a set of eight original compositions, where melodic 'hooks' are to be specifically composed for each track.
- VII. These tracks are then given to the same participants for an assessment period of ten days.
- VIII. A final evaluation and measurement phase will be conducted with the same participants who will be asked if they can identify the melodic 'hook' for each individual track.

# RESOURCES AND EQUIPMENT

## Sources

### **Oliver Sacks, M.D. (2007). *Musicophilia Tales of Music and the Brain*.**

Oliver Sacks is a highly regarded and respected professor of neurology and psychiatry at the Columbia University Medical Centre. His collections of neurological case studies in publications such as *The Man who Mistook his Wife for a Hat* (1985) and *The Mind's Eye* (2010), have garnered him several literature awards and recognition.

*Musicophilia: Tales of Music and the Brain* written in 2007 is one other such collection with a focus on music related neurological conditions such as 'earworms' - snippets of catchy tunes lodged in one's consciousness for a considerably long period of time. This is a useful text in determining what type of factors are involved in this type of phenomena.

### **Allan F. Moore (Ed.). (2003). *Analyzing Popular Music*.**

The international field of popular music studies have been in development for the past 30 years with scholars from around the globe in various disciplines coming together to discuss and share a wealth of diverse knowledge, methodologies and approaches to popular music analysis (Warwick, 2003).

Allan F. Moore a professor of Popular Music in the Department of Music and Sound Recording at the University of Surrey, brought together ten essays written by established popular music scholars ranging from musicologists, ethnomusicologists, researchers and other music specialists. Essays of interest are:

- I. **Essay 1** *Popular Music Analysis: Ten Apothegms and Four Instances* by Robert Walser
- II. **Essay 2** *From Lyric to Anti-Lyric: Analysing the Words in Pop Song* by Dai Griffiths
- III. **Essay 4** *Feel the Beat Come Down: House Music as Rhetoric* by Stan Hawkins
- IV. **Essay 5** *Talk and Text: Popular Music and Ethnomusicology* by Martin Stokes

### **Gary Burns (1987). *A Typology of 'Hooks' in Popular Records*.**

Gary Burns is Editor of *Popular Music and Society*, a quarterly academic journal founded by R. Serge Denisoff in 1971 and published by Routledge, a division of Taylor & Francis. Burns is also a Professor for the Department of Communication at the Northern Illinois University, where he teaches media studies and popular culture.

His 1987 article *Typology of 'Hooks' in Popular Records* examines the 'hook' device and its many forms, categorising them into two major groups *textual* and *non-textual*. He then further defines sub-categories which include *lyrical*, *musical*, *performance* and *production* elements (Appendix 1). His description of a melodic 'hook' forms the core definition of this study.

## Resources

**Participants.** A sample of appropriate candidates will be sourced to participate in two rounds of melodic 'hook' identification exercises which will be documented using a questionnaire and interview approach.

**Musicians.** Session musicians will be outsourced including, but not necessarily be limited to an acoustic guitarist, an electric guitarist, a bassist, a drummer, a percussionist, a violinist and a few lead and backup vocalists.

**Audio Engineers.** Assistant engineers may need to be sourced to ensure big tracking sessions run smoothly and efficiently.

**Recording Studios.** The TLA and Neve studios at SAE Institute will be the primary studios used for recording and mixing.

**Recording Locations.** Specialised recording locations and spaces may need to be researched depending on the nature and requirements for the individual songs.

## Equipment

**Beyerdynamic DT770 Pro Headphones.** Participants may utilise any playback equipment to listen to the song samples during the take home portion of the melodic 'hook' identification process. However for the interview portion a Beyerdynamic industry standard headphone will be used in order to achieve similar listening experiences for all involved.

**Laptop and DAW Softwares.** A MacBook Pro with Pro Tools 10 and Logic Pro 9 will be the main tools used for composing, arranging, editing and mastering the songs.

**Mixing Consoles.** The TLA and Neve mixing console available at SAE Institute will be the primary mixing consoles used to record and mix the individual songs.

**Microphones.** Appropriate microphones will be used as the project requires. The dynamic mic SM57 and basic condensers such as the NT-2A or the AT2020 will most likely be the staple microphones of choice. The Sigma ribbon microphone may also feature heavily in the project.

**M-Audio Interface.** A simple audio interface i.e. FastTrack Pro 2 channel interface, will be used for tracking dates at home.

**Outboard Gear.** Several outboard gear such as compressors, reverb units and other various effect units will be utilised during the mixing stages of the project.

**Word Processing and Spreadsheet Softwares.** Mac's iWork '09 programs such as *Pages* and *Numbers* will be the primary softwares used to draft all the appropriate documentation such as the questionnaire and interview forms, reports, charts and data entry and calculations.

**Epson Stylus NX220.** A printer/scanner will be used to print and reproduce all necessary reports and documentation.

# CONCEPTUALISATION AND PLANNING OF RESEARCH

## Constraints and Difficulties

There are a number of constraints and difficulties foreseen at the onset of this study. Several measures will be put in place to minimise the effect these restrictions will have on the final outcome.

- I. **Limited knowledge in musical cognition, e.g. melodic contours, similarities and expectancies.**  
A great number of journal literature on these concepts are available but may be hard to comprehend and understand. Arranging regular meetings with the project's main advisor, Paul Edwards, and discussing any uncertainties as they come to light should alleviate most of the difficulty in comprehending this vast topic.
- II. **Access to a large number of participants for an accurate comparative analysis of the questionnaire and interview results.** Setting a clear and defined stratification criteria should enable a minimum requirement of comparative data to satisfy the small scope of the project.
- III. **Sampling melodic 'hooks' from a representative cross-section of contemporary popular music.**  
A maximum of ten chart topping songs will be selected from a period of ten years in order to maximise the diversity of the sample set for the melodic 'hook' extraction process.
- IV. **Participants will only have a short time to get familiarised with the newly composed songs compared to the possibility of the participants being familiar with the commercial songs.** MP3 copies of the original songs will be given to the participants ten days before the last round of interviews. This is to ensure that they have ample time to listen to the tracks more than once or twice before participating for final evaluations.
- V. **Limited knowledge in devising and conducting for questionnaires and interviews.**  
Several literature have been made available in the source drive that contain relevant information on how to successfully conduct questionnaire and interview processes. These will be utilised as well as continuing further research into the topic. Liaising with the research advisor, Marc C. Scott, will also be scheduled throughout the course of the project.
- VI. **Participant's personal taste in music may affect their ability to recognise and establish a melodic 'hook'.**  
This will be addressed and noted in varying degrees during the questionnaire and interview processes. Questions regarding participant's taste in musical genre and overall musical knowledge will be factored into the process to identify any correlation between music preferential tendencies and melodic 'hook' recognition abilities.
- VII. **Limited knowledge in designing and presenting statistical analysis.**  
Literature on this topic is available on the source drive and will be used as reference. Further research into this area will also be conducted as well as regular discussions with both the project advisor and research advisor.

## Likely Outcomes

### Melodic 'Hook' Analysis Hypothesis

As mentioned earlier, all efforts to diversify the selection of the initial sample set of popular songs will be carried out. This ensures an accurate representation of musical styles and genres and will hopefully yield a diverse cross-section of melodic 'hooks' to analyse. A hypothesis is proposed stating that in general, melodic 'hooks' tend to contain simple melodic construct and that its application within the composition is fairly transparent and predictable. The following results are foreseen:

- I. **A simple melodic contour pattern.** Melodic 'hooks' will generally comprise of single repeated notes or several adjacent notes that have a tendency to ascend in a stepwise manner and descend into the original pitch or towards the tonic.
- II. **Short length.** Melodic 'hooks' will generally be only one to two bars in length.
- III. **Straightforward rhythm pattern.** Melodic 'hooks' will tend to follow the beat with little or no syncopation.
- IV. **Complete phrases.** Melodic 'hooks' will generally appear as complete phrases and are usually syllabic in nature.
- V. **Straightforward accents.** Melodic 'hooks' will usually begin on the downbeat and conclude on the upbeat.
- VI. **Predominantly found in the chorus.** Melodic 'hooks' will generally be found within the chorus sections of the song and are equally represented in the beginning and at the end of stanzas.
- VII. **Use of repetition.** Melodic 'hooks' will always be repeated more than once. Usually the most number of repetition will occur within the section it is located in.
- VIII. **Familiarity greatly improves identification, recall and persistence of a melodic 'hook'.** The more familiar the song is to an individual the more they are likely to establish a 'hook', remember that 'hook' and have it persist in their consciousness.

### Creative Project Outcome

An album of eight original song compositions will be produced for the creative component of this project. These songs will be the subject of implementation for the melodic 'hooks' based on the findings from the research analysis. The album will not necessarily attempt to mimic the 'popular' genres but will retain some pop music sensibilities in terms of structure, composition and instrumentation. The production will take influence from bands and artists such as Radiohead, Beck and Bon Iver who take analogue based sounds and manipulate it with interesting digital effects and processes. The album will be produced at an industry standard complete with appropriate packaging and artwork. Distribution strategies will be also developed and carried out to create a suitable and well rounded product that can serve as a high quality showcase portfolio for prospective employers.

## **Process Summary**

### **RESEARCH**

Further research into the ARIA charts, sampling methodologies, questionnaire and interview techniques will be conducted in preparation for the first phase of melodic 'hook' identification. This stage will also involve ongoing research into statistical analysis techniques and instrumentation to aid the melodic 'hook' dissection phase of the project. Research will cover topics such as musical cognition, specifically in melodic expectancies, melodic similarities, melodic and rhythmic contours, and psychological phenomena such as 'earworms'.

### **PRE PRODUCTION**

Involves sourcing twenty-four participants, based on a set criteria, to be involved in a preliminary melodic 'hook' identification process. Ten contemporary popular songs from the Top 100 ARIA charts, will be given to the selected participants to determine whether they can identify melodic 'hooks' within each song. Results are collected and tallied via a combination of questionnaires and follow-up interviews. Melodic 'hooks' extracted from this exercise will then be quantitatively analysed and examined. The results will determine the standards that will guide the construct of melodic 'hooks' to be implemented in a set of eight original song compositions. This stage will also involve sourcing out session musicians and appropriate recording spaces for the different musical elements of the record as well as drafting a preliminary schedule for tracking dates.

### **PRODUCTION**

This stage involves recording material for at least eight original song compositions. This process will encompass coordinating schedules for session musicians as well as making sure proposed tracking dates are on schedule. Organising contingency plans such as back-up musicians and back-up recording spaces will also be considered. Recording consoles and spaces at SAE such as the Neve and the TLA will be the primary facilities used during this process.

### **POST PRODUCTION**

This stage will predominantly focus on editing the recorded material, consolidating them into stems and mixing them using a combination of DAW's and analogue mixing consoles such as the Neve or the TLA. These final mixes will then be appropriately mastered ready for packaging and distribution. Appropriate artwork design will be considered and final format preparations for CD and online distribution will be conducted.

### **MEASUREMENT & EVALUATION**

The same group of participants will be given a copy of the finished album for a ten day assessment period. They will then be asked to identify a melodic 'hook' for each of the original songs in a final round of interviews. This will measure and evaluate the success of implementation. This stage will also involve collation of all necessary data to finalise a written report that details all the outcomes and appropriate conclusions of the research project.

## Timeline

The following is a summary of a proposed timeline for this study. A calendar have been devised to illustrate how each stage may run concurrent with the next stage (Appendix 2). Total hours does not take into consideration writing final reports.

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### **SAMPLING OF PARTICIPANTS** - *Beginning Trimester 5 Week 5*

Sourcing appropriate participants according to set criteria. Arranging for interview dates and organising any relevant paperwork for obtaining permission and 'informed consent' papers (Bertrand & Hughes, 2005).

**5 hrs**

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### **SAMPLING OF MELODIC 'HOOKS'** - *Beginning Trimester 5 Week 5*

Selection of ten appropriate contemporary popular songs from the Top 100 ARIA charts from the last decade and compiling them onto a CD to be distributed amongst the participants (or alternatively to be made available via online playlists). Participants will then have five days to listen to the compilation and fill out an accompanying questionnaire.

**5 hrs**

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### **RESEARCH** - *Beginning Trimester 5 Week 6*

Involves further research on music theory such as melodic contours, melodic expectancy, pitch cognition, 'hook' usages and psychological phenomenons such as 'earworms'. Research into questionnaires and interview techniques, sampling methods and contemporary popular music charts will also be conducted in preparation for the first round of 'hook' identification.

**20 hrs**

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### **QUESTIONNAIRES AND INTERVIEWS** - *Beginning Trimester 5 Week 6*

Participants are asked to identify melodic 'hooks' during a short interview process. Their reasons and assumptions are recorded via a combination of audio recording device and written notes.

**14 hrs**

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### **STATISTICAL ANALYSIS** - *Beginning Trimester 5 Week 8*

An analysis will be conducted to investigate statistical data with respect to melodic contours, tonal contours, interval contours, rhythmic patterns, repetition, location, etc.

**32 hrs**

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### **COMPOSITION AND ARRANGEMENT** - *Beginning Trimester 5 Week 10*

Writing of at least eight original song compositions that implement a melodic 'hook' device in accordance to the research findings gathered from the statistical analysis. This stage will also encompass the initial arrangement of the songs.

**70 hrs**

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**RECORDING** - *Beginning Trimester 5 Week 14*

Sourcing out session musicians, appropriate recording spaces and arranging for tracking dates to record the necessary audio elements for the album. Sourcing out session engineers is also included at this stage.

**65 hrs**

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**EDITING AND FINAL ARRANGEMENTS** - *Beginning Trimester 6 Week 4*

Involves editing audio elements in preparation for final mix down. Final song arrangement decisions are also made at this stage.

**40 hrs**

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**MIXING AND MASTERING** - *Beginning Trimester 6 Week 7*

Mixing of audio stems and elements into their final mix allocated busses. This stage will also see the mastering of the final mixes into appropriate formats for CD and online distribution.

**45 hrs**

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**FINAL INTERVIEWS** - *Beginning Trimester 6 Week 10*

A copy of the album is distributed to participants where they will have ten days to listen and get familiarise with the songs. A final interview process will follow, designed to determine whether the specifically implemented melodic 'hooks' within each song can be properly identified.

**20 hrs**

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**PACKAGING AND ARTWORK DESIGN** - *Beginning Trimester 6 Week 13*

Design of appropriate packaging and complimentary artwork for the album concept.

**14 hrs**

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**330 hrs** = *total time allocated*

# SIGNIFICANCE OF RESEARCH

## Study Scope

Melodic recall and melodic retention are vast topics that musicologist and neurologists devote a lifetime researching. Given the small scope of this project there are quite a number of limitations that this study recognises which include:

- I. **Marketing and its influence on memorability.** Marketing allows for a song to reach a wide variety of listeners in great numbers. This mass publicity can have major influences on an individual's recall capacity for a particular melodic 'hook' e.g. a 'hook' being used as a commercial jingle which has ample airtime may have a higher chance of being remembered and retained by a bigger population.
- II. **Visual stimuli.** Music videos, a memorable album cover/artwork and even an arresting visual propaganda can all have an effect on how the individual remembers a piece of music.
- III. **Alternate forms of 'hook' devices.** Other 'hook devices, according to Burns (1987), may include rhythm, harmony, instrumentation, dynamics, tempo, editing special effect, etc. These are complex concepts that can all work together to enhance the memorability of a piece of music.
- IV. **Sociological, cultural, religious and political determinants.** Social or culture events such as birthdays and holidays (e.g. Christmas, New Years, etc.) or religious and political based influences (e.g. hymns, national anthems) may contribute to the ease of an individual's ability to recall and retain a particular musical tune.

There is also the limitation of the initial sample set of popular songs to only encompass ten year's worth of top-charting popular songs. Further development in this area is required to attain a more accurate average for the statistical analysis. A broader proposal for this study may consider analysing a broader range of songs from a broader span of several years. Other musical styles such as jazz, blues, classical, folk etc., may also be considered for further inclusion into the study in the future.

## Reasoning for Undertaking the Study

In choosing a study topic for this research project, I wanted to focus on a subject matter that could easily translate into the 'real world'. As an aspiring music producer and song writer, I believe that one of the many invaluable skills to have is the ability to produce music that have substantial cause for success in its respective chart genre. A song that can be easily remembered and effortlessly hummed indicate that it has the means to be memorable and catchy, which are some of the basic requirements for a song to attain some form of popularity.

A song writer have at his or her disposal several devices which can be employed to improve the memorability of a song. The melodic 'hook' is one such device. An in-depth investigation into the construct and application of these melodic 'hooks' will equip myself and fellow peers with the knowledge of how to successfully implement this device into any given song composition. It will also aid in making better decisions towards creating a more cohesive and appropriately palatable selection of songs for any given music production briefs in the future.

# GLOSSARY OF TERMS

**Accent**

Emphasis on one note or chord.

**Album/Record**

A collection of recordings, on long-playing record, cassette, or compact disc, that are issued as a single item.

**Beat**

The temporal unit of a composition, as indicated by the up-and-down movements, real or imagined, of a conductor's hand.

**Cadence**

A melodic or harmonic formula that occurs at the end of a composition, a section, or a phrase, conveying the impression of a momentary or permanent conclusion.

**Chorus**

A part of a song that is repeated after each verse.

**Conjunct/Disjunct**

A group of successive notes are characterised as 'conjunct' if they are successive degrees of the scale and 'disjunct' if they form intervals larger than a second.

**Contemporary**

Twentieth century music and onwards with particular focus on popular music.

**Earworms**

Musical fragments which remain persistently repetitious in an individual's consciousness for a long period of time.

**Harmony**

Musical tones sounded simultaneously.

**Inversion**

Substitution of higher for lower tones and vice versa. There are two main types of inversion, harmonic inversion and melodic inversion. In harmonic inversion, the lower note (of an interval) or the root (of a chord) is in an upper part instead of in the bass. In melodic inversion, the successive intervals of the melody are inverted.

**Lyrics**

Expressing the writer's emotions, usually briefly and in stanzas or recognised forms.

**Measure**

A group of beats (units of musical time), the first of which normally bears an accent.

**Melodic Contour**

Melodic motion with regard to measurement of intervals of successive pitches or notes. Described as either having *conjunct* or *disjunct* characteristics.

**Melodic Expectancy**

The prediction of what note will come next after a succession of preceding notes. Studies have been shown that a strong correlation between common melodic patterns and melodic expectancies exist, where melodies adhering to a set of principles devised by music theorist Eugene Narmour (1990) are judged as more cohesive than those which violate these principles (Russo, 1999).

**Melodic Similarity**

A way to measure degrees of similarities in music either by human or algorithmic judgements. There is an abundance of varying measurement techniques in this field some of which are covered and compared in a paper for the Conference on Interdisciplinary Musicology held in Graz, Austria on the 15th-18th April, 2004.

**Melodic 'Hook'**

A musical or lyrical phrase that stands out and is easily remembered (Monaco & Riordan as cited in Burns, 1987).

**Melody**

A succession of musical tones.

**Memory**

The ability of an individual to store, retain, and recall information and experiences.

**Musical Device**

Variation techniques used by composers and songwriters to keep the interest of an audience e.g. fragmentation, inversion, ornamentation, imitation, modulation, etc.

**Non-Probability Sampling (Convenience Sampling)**

A sampling process where respondents are chosen based on their convenience and availability (Babbie as cited in Creswell, 2009).

**Note**

A single tone of definite pitch made by a musical instrument or the human voice.

**Single-Stage Sampling**

A sampling process where the researcher has access to names in the population and can sample people directly (Babbie as cited in Creswell, 2009).

**Song**

A short musical composition with accompanying vocals. Written in a fairly style of verse and chorus forms.

**Stratification**

Specific characteristics of individuals (e.g. both females and males) are represented in the sample and the sample reflects the true proportion in the population of individuals with certain characteristics (Fowler as cited in Creswell, 2009)

**Ornamentation**

A spontaneous act by the interpreter who, in performing a written or traditional melody, enlivened, or varies it through his technique of improvisation.

**Ostinato**

A clearly defined phrase that is repeated persistently, usually in immediate succession, throughout a composition.

**Phrase**

A division of the musical line, somewhat comparable to a clause or a sentence in prose.

**Pitch**

The location of a musical sound in the tonal scale.

**Popular Music**

Music that is available commercially and are accessible to the general public (Morrison, 2007).

**Rhythm**

The systematic arrangement of musical sounds, principally according to duration and periodic stress.

**Root**

The generating note of a triad or any of its inversions and modifications (seventh chord).

**Strophic Form**

Designation for a song in which all stanzas of text are sung to the same music, in contrast to a song with new music for each stanza (also known as thorough composed).

**Tempo**

The speed of a composition or a section thereof, ranging from very slow to very fast, as indicated by tempo marks such as largo, adagio, andante, moderato, allegro, presto and prestissimo.

**Tonality**

Loyalty to a tonic where a piece of music gives preference to one tone (the tonic).

**Tuning**

Adjustment of the strings of stringed instruments (including the piano and harpsichord) or the pipes of the organ to their proper pitch.

**Variations**

A musical form (variation form) resulting from the consistent application of variation techniques so that a musical theme is followed by a varying number of modified restatements, each being a "variation."

**Verse**

A group of lines that form a unit in a poem or song.

**Western Music**

Music that is based on Western notation especially of major and minor tonalities.

# APPENDIX

Appendix 1 - Burns' (1987) categories of 'hook' devices.

TEXTUAL ELEMENTS		NON-TEXTUAL ELEMENTS	
LYRICAL ELEMENTS	MUSICAL ELEMENTS	PERFORMANCE ELEMENTS	PRODUCTION ELEMENTS
<p><b>MEANING-BASED:</b> Language that uses topical issues such as love, heartbreak, sex, drugs, war, etc. May use jargons, obscenities, nonsensical words, polysyllabic words and trivial quotes. May use techniques such as simile, metaphor and personification.</p>	<p><b>MELODY:</b> Verses, choruses and riffs are common contexts for melodic 'hooks' May include repeated single notes or any number of notes that may or may not be repeated. Melodic intertextuality can also serve as a basis for melodic 'hooks'.</p>	<p><b>INSTRUMENTATION:</b> Fads, and trends, the performer's skills, current conventions and originality or uniqueness of an instrument are some factors that can make instrumentation distinct and memorable.</p>	<p><b>SOUND EFFECTS:</b> Can contribute greatly to the mood of a record and provide a distinctive moment for the listener. May include sounds such as gun shots, explosions, cash registers, touch tone effect, etc.</p>
<p><b>SOUND-BASED:</b> May make use of absurd, incidental, cryptic and obscure vocal sounds that has confusing meanings. May make use of techniques such as alliteration, onomatopoeia, and assonance.</p>	<p><b>RHYTHM:</b> An occurrence in the song where there is a rhythmic change in music or rhythmic modulation from the natural established rhythm pattern. May use unusual or odd meter changes and isolated beat modulation.</p>	<p><b>TEMPO:</b> May include extreme <i>rubato</i> (speeding up or slowing down of tempo) either at the beginning or at the end of a song. Usually only found in arrangements once or twice as it may cease to be of interest after repetition.</p>	<p><b>EDITING:</b> May make use of vocal edits, platform version edits (e.g. radio edit, album edit, etc.), juxtapositional edits, pastiches and collages, transitional fades(i.e. fade outs, fade ins and crossfades).</p>
	<p><b>HARMONY:</b> Chord changes that establish a pattern in a song. Some can have extremely simple patterns or abstruse patterns (no patterns). May feature radical changes within the pattern but which preserve the basic chord progression.</p>	<p><b>DYNAMICS:</b> Usually a function of production rather than performance but may make use of techniques like <i>crescendos</i> (gradual build or fade-ins), <i>decrescendos</i> (gradual quietness or fade-outs) and <i>sforzandos</i> (sudden loudness).</p>	<p><b>MIX:</b> Tendencies of records or bands may constitute a 'hook' device especially if it becomes convention for that specific style, genre or act. May include techniques such as under and over mixing and integration of non related sounds into the mix.</p>
		<p><b>IMPROVISATION &amp; ACCIDENT:</b> Usually devices that give the impression of spontaneity, improvisation, apparent accident and departure from the 'expected' text can all create a distinctiveness on a record.</p>	<p><b>CHANNEL BALANCE:</b> May include channel isolation of an instrument on one channel, pan effects, and call and response techniques in the stereo field.</p>
			<p><b>SIGNAL DISTORTION:</b> May include echo and reverb effects, distinctive EQ distortions, ring modulation effects, phasing and flanging effects.</p>

Appendix 2 - Calendar timeline showing concurrent stages.

	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL WKLY HOURS
TRI 5	SAMPLING OF PARTICIPANTS							5 HRS
WK 5			SAMPLING OF MELODIC 'HOOKS'					5 HRS
WK 6	RESEARCH							7 HRS
	QUESTIONNAIRE AND INTERVIEWS							7 HRS
WK 7	RESEARCH							7 HRS
	QUESTIONNAIRE AND INTERVIEWS							7 HRS
WK 8	RESEARCH							6 HRS
	STATISTICAL ANALYSIS							16 HRS
WK 9								
	STATISTICAL ANALYSIS							16 HRS
WK 10	COMPOSITION AND ARRANGEMENT							10 HRS
WK 11	COMPOSITION AND ARRANGEMENT							10 HRS
WK 12	COMPOSITION AND ARRANGEMENT							10 HRS
WK 13	COMPOSITION AND ARRANGEMENT							10 HRS
WK 14	COMPOSITION AND ARRANGEMENT							10 HRS
	RECORDING							10 HRS
TRI 6	COMPOSITION AND ARRANGEMENT							10 HRS
WK 1	RECORDING							10 HRS
WK 2	COMPOSITION AND ARRANGEMENT							10 HRS
	RECORDING							10 HRS
WK 3								
	RECORDING							10 HRS

Appendix 2 - cont'd

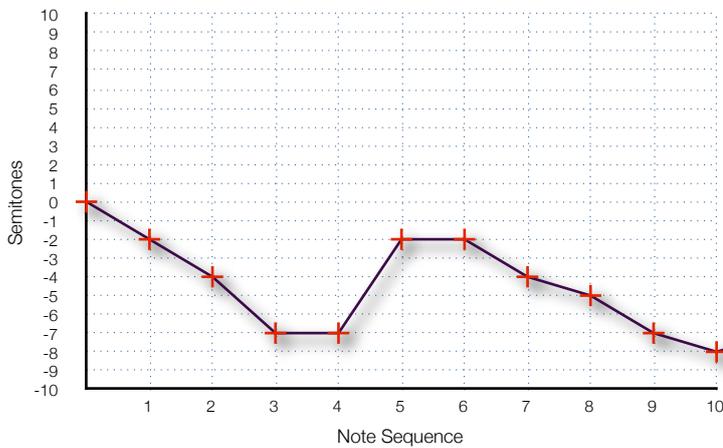
	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL WKLY HOURS
WK 4	EDITING AND FINAL ARRANGEMENTS							10 HRS
	RECORDING							10 HRS
WK 5	EDITING AND FINAL ARRANGEMENTS							10 HRS
	RECORDING							10 HRS
WK 6	EDITING AND FINAL ARRANGEMENTS							10 HRS
	RECORDING							5 HRS
WK 7	EDITING AND FINAL ARRANGEMENTS							10 HRS
	MIXING AND MASTERING							12 HRS
WK 8								
	MIXING AND MASTERING							12 HRS
WK 9								
	MIXING AND MASTERING							12 HRS
WK 10		FINAL INTERVIEWS						6 HRS
	MIXING AND MASTERING							9 HRS
WK 11	FINAL INTERVIEWS							7 HRS
WK 12	FINAL INTERVIEWS							7 HRS
WK 13	PACKAGING AND ARTWORK DESIGN							7 HRS
WK 14	PACKAGING AND ARTWORK DESIGN							7 HRS

Appendix 3 - Spread of sampled participants according to stratification criteria

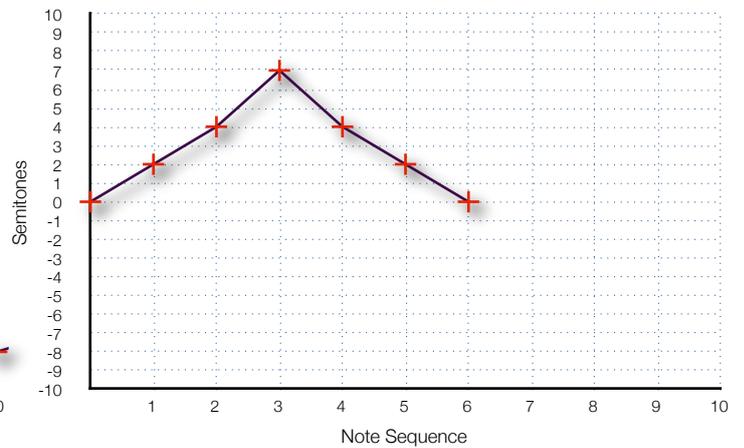
	18-21 yrs.		22-30 yrs.		31-40 yrs.		41-50 yrs.		SubTotal
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
MUSIC ORIENTED (MUSO)	1	1	1	1	1	1	1	1	8
AUDIO PRODUCTION PRACTITIONER (APP)	1	1	1	1	1	1	1	1	8
GENERAL PUBLIC (GP)	1	1	1	1	1	1	1	1	8
SubTotal	3	3	3	3	3	3	3	3	GRAND TOTAL = 24

Appendix 4 - Melodic contour sample comparison of four well known melodic 'hooks'

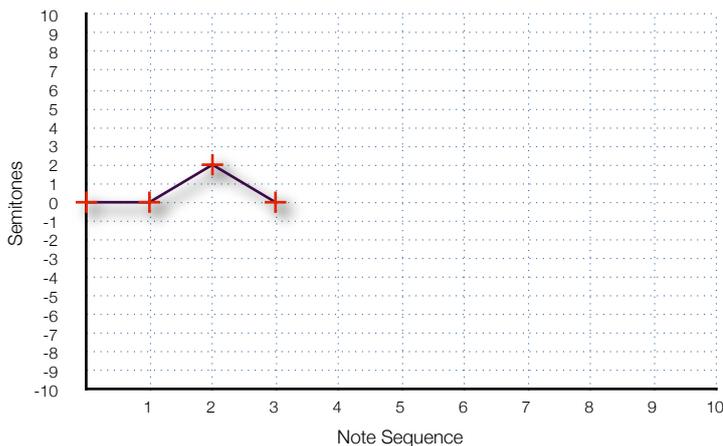
+ 'Layla' by Eric Clapton



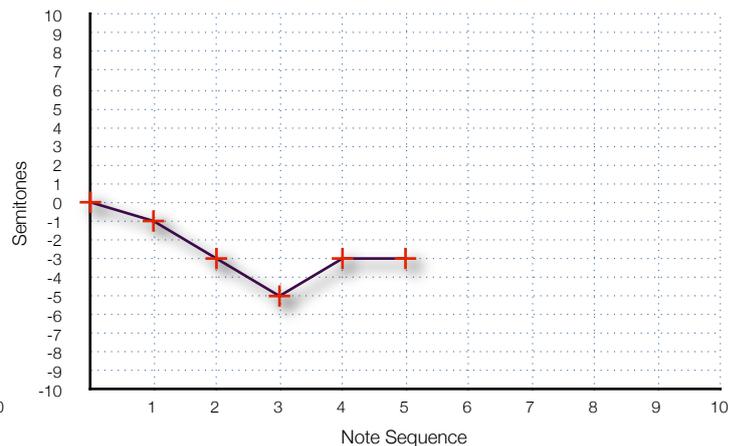
+ 'I'm Too Sexy' by Right Said Fred



+ 'You're So Vain' by Carly Simon



+ 'We Will Rock You' by Queen



# REFERENCES

- Bartlett, J. & Halpern, A. (2011). The Persistence of Musical Memories: A Descriptive Study of Earworms. *Music Perception*, 28(4), 425-431. Retrieved from <http://search.proquest.com/docview/868606085?accountid=59092>
- Beaman C. P. & Williams T. I. (2010). Earworms (Stuck Song Syndrome): Towards a Natural History of Intrusive Thoughts. *British Journal of Psychology*, 101(4), 637-653. doi: 10.1348/000712609X479636
- Berger, A. A. (2000). *Media and Communication Methods: An Introduction to Qualitative and Quantitative Approaches*. California: Sage Publications
- Berry, A. (2006). The Effect of Pattern Recognition and Tonal Predictability on Sight-Singing Ability. *Psychology of Music*, 34(4), 431-447. Retrieved from <http://search.proquest.com/docview/1339076?accountid=59092>
- Bertrand, I. & Hughes, P. (2005). *Media Research Methods: Audiences, Institutions, Text*. New York: Palgrave Macmillan
- Braheny, J. (2006) *The Craft and Business of Songwriting: A Practical Guide to Crating and Marketing Artistically and Commercial Successful Songs* (3rd Edition). Cincinnati: Writer's Digest Books.
- Bregman, M. & Eerola, T. (2007). Melodic and Contextual Similarity of Folk Song Phrases. *Musicae Scientiae*. 11(1), 211-233. doi: 10.1177/102986490701100109
- Burns, G. (1987). A Typology of 'Hooks' in Popular Records. *Popular Music*, 6(1), 1-20. Retrieved from <http://search.proquest.com/docview/740936915?accountid=59092>
- Creswell, J. (2009). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. California: SAGE Publications.
- Crickmore, L. (2003). A Re-valuation of the Ancient Science of Harmonics. *Psychology of Music*, 31(4), 391-403. Retrieved from <http://search.proquest.com/docview/1339254?accountid=59092>
- Cuddy, L., Keane, D., Zuk, I. (1982) Factors of Musical Perception: Three Points of View. *Intersections*, 3, 102-122. Retrieved from <http://search.proquest.com/docview/1359832?accountid=59092>
- Farish, I. (2010). Music Makers: Songwriters in the Schools - Song structure. *Canadian Music Educator*, 51(3), 53-55. Retrieved from <http://search.proquest.com/docview/753557788?accountid=59092>
- Forney, K. & Machlis, J. (2007). *The Enjoyment of Music* (10th Edition). New York: W.W. Norton & Co.
- Herrera, M. (2010). The Great Pop Boom. *Billboard - the International Newsweekly of Music, Video and Home Entertainment*, 122(50), 8-11, 16. Retrieved from <http://search.proquest.com/docview/850694419?accountid=59092>
- Kasha, A. & Hirschhorn, J. (1979). *If They Ask You, You Can Write a Song*. New York: Simon and Schuster.
- Krumhansl, C. L. (2000). Rhythm and Pitch in Music Cognition. *Psychological Bulletin*, 126(1), 159-179. Retrieved from <http://math.jacobs-university.de/oliver/teaching/iub/spring2005/mmm/handouts/rhythm.pdf>
- Lichtman, I. (1998). The Selling Power of Song: Catalog Evergreens Pop Up as Jingles in Increasing Numbers. *Billboard - The International Newsweekly of Music, Video and Home Entertainment*, 110(44), 38-38, 60. Retrieved from <http://search.proquest.com/docview/979313?accountid=59092>

- Mercer-Taylor, P. (1999). Two-and-a-half Centuries in the Life of a Hook. *Popular Music and Society*, 23(2), 1-15. Retrieved from <http://search.proquest.com/docview/1334754?accountid=59092>
- Moore, A. F. (Ed.). (2003). *Analyzing Popular Music*. New York: Cambridge University Press.
- Morrison, S. (2007). Music makers: Popular Culture in Music Education - Popular Music in the Classroom: Where to Begin? *Canadian Music Educator*, 49(2), 53-54. Retrieved from <http://search.proquest.com/docview/1029092?accountid=59092>
- Müllensiefel, D. (2004, April 15-18). *Measuring Melodic Similarity: Human vs. Algorithmic Judgments*. Paper presented at the 2004 Conference on Interdisciplinary Musicology, Graz, Austria. Retrieved February 7, 2012 from [http://www.uni-graz.at/richard.parncutt/cim04/CIM04\\_paper\\_pdf/Muellensiefen\\_Frieler\\_CIM04\\_proceedings.pdf](http://www.uni-graz.at/richard.parncutt/cim04/CIM04_paper_pdf/Muellensiefen_Frieler_CIM04_proceedings.pdf)
- O'Neal, J. (2008). *Fessenden - The Next Chapter*. Retrieved December 10, 2011 from <http://www.rwonline.com/article/fessenden-%E2%80%94-the-next-chapter/273>
- Russo, F. A. (1999). *Motor Theory of Melodic Expectancy*. Retrieved February 7, 2012, from <http://www.acoustics.org/press/137th/russo.html>
- Sacks, O. (2007). *Musophilia: Tales of Music and the Brain*. New York: Alfred A. Knopf.
- Schmuckler, M. A. (2010). Melodic Contour Similarity Using Folk Melodies. *Music Perception*, 28(2), 169-193. Retrieved from <http://search.proquest.com/docview/868606331?accountid=59092>
- Schubert, E. & Stevens, C. (2006). The Effect of Implied Harmony, Contour and Musical Expertise on Judgements of Similarity of Familiar Melodies. *Journal of New Music Research*, 35(2), 161-174. Retrieved from [http://katestevens.weebly.com/uploads/5/3/0/6/5306174/schubert\\_stevens\\_06.pdf](http://katestevens.weebly.com/uploads/5/3/0/6/5306174/schubert_stevens_06.pdf)
- Sernoe, J. (2005). "Now We're on the Top, Top of the Pops": The Performance of "Non-Mainstream" Music on "Billboards" Albums Charts, 1981-2001. *Popular Music and Society*, 28(5), 639-662. Retrieved from <http://search.proquest.com/docview/1339096?accountid=59092>
- Sinclair, K. (2010). Radio Friendly: Part 2. *Canadian Musician*, 32(4), 62. Retrieved from <http://search.proquest.com/docview/821010009?accountid=59092>
- Solomon, L. J. (2002). *Variation Techniques for Composers and Improvisors*. Retrieved February 1, 2012, from <http://solomonsmusic.net/vartech.htm>
- Tagg, P. (1982). Analysing Popular Music: Theory, Method and Practice. *Popular Music*, 2, 37-65. Retrieved from <http://www.tagg.org/articles/xpdfs/pm2anal.pdf>
- Temperley, D. (2008). A Probabilistic Model of Melody Perception. *Cognitive Science* 32, 418-444. doi: 10.1080/03640210701864089
- Warwick, J. (2004). *Analyzing Popular Music Review*. Retrieved February 7, 2012, from <http://www.popular-musicology-online.com/issues/04/warwick-moore.html>
- Williams, L. R. (2005). Effect of music training and musical complexity on focus of attention to melody or harmony. *Journal of Research in Music Education*, 53(3), 210-221. Retrieved from <http://search.proquest.com/docview/1094289?accountid=59092>
- World Science Festival. (2009). *Notes and Neurons: In search of the Common Chorus* [Video file]. Retrieved from [http://worldsciencefestival.com/videos/notes\\_neurons\\_in\\_search\\_of\\_the\\_common\\_chorus](http://worldsciencefestival.com/videos/notes_neurons_in_search_of_the_common_chorus)