

## ANALYTICAL CASE STUDY RESEARCH PROJECT: RESEARCH DESIGN WORKSHEET #2 (OPENING PARAGRAPH)

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### Directions:

- Use the following worksheet (save as a new document and use as much space as you need) to develop and outline your final research project; do the upcoming in-class peer-review assignment; and for reference when you meet with Dr. Mayfield about your paper during the semester.
    - See the SYLLABUS and WEEKLY MODULE INSTRUCTIONS for further detail.
  - Turn in a copy of your completed worksheet by the due date/time (via Blackboard, under ASSIGNMENTS).
  - *NOTE: This is a very early, pre-research worksheet...it is ABSOLUTELY fine if you change your focus entirely or even just parts of your research design over the semester.*
    - *You do NOT need to turn in a new worksheet if your project changes.*
    - *Note that it is a sign of a good researcher if you are able to retool, adjust scale and/or scope, or abandon an idea completely if your due diligence suggests this is the best course of action.*
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1. NAME: Qilin Ye

2. TITLE: Re-inventing Harmony: a Chronological, Theoretical Analysis of the Temperament Systems

3. OPENING PARAGRAPH:

*In the previous worksheet, I basically wrote the opening paragraph(s) already. Here, I will follow the same content, but made some minor structural, grammatical, and syntactical adjustments.*

Harmony, the foundation of musical expression, serves as the bedrock upon which the intricate interplay of melodies and emotions is built. These complex relationships between notes weave a rich tapestry that enables composers to convey their artistic intent. However, translating the perfect “harmony” from one’s mind into a physical, instrumental representation has proven to be a particularly challenging lingering feat that, to this date, still lacks a perfect solution. Throughout history, musicians and theorists have sought to understand and achieve this elusive “perfect harmony” by developing various temperament systems. The evolution of temperament systems never stops: from the classic *Pythagorean Tuning (PT)* which stresses the “purity” of intervals, to the diverse world of Just Intonation, then to the revolutionary shift to *Equal Temperament (ET)*, and the list goes on, as contemporary music is experimenting with further novel techniques. As new systems emerged, musicians’ perceptions of “harmony” also changed accordingly. Historically, the *perfect fifth* interval has always been considered harmonious, but it took centuries for the *major third* and *major sixth*, two chords considered highly harmonious today, to gain widespread acceptance. And the *tritone*, once dubbed the “devil’s interval” due to its dissonant sound, also found its use in Western music during Romantic period and beyond, when composers began to expand the boundaries of harmonic expression.

This research paper will trace the historical progression of major temperament systems and examine the tuning methods corresponding to each, delving into both the engineering aspects of how instrumental technicians “maintained” these harmonies, as well as the academic aspects of how the musicians, composers, and scholars reacted. A significant portion of this paper will be dedicated to analyzing the ongoing debate surrounding *Equal Temperament (ET)* particularly since, as a predominant

tuning system, it is praised by many musicians due to its mathematical rigor, yet criticized by others for its artificiality and lack of “color.” By exploring the evolution of temperament systems, their associated tuning methods, and the controversy surrounding ET, this paper aims to provide a comprehensive understanding of the quest for “perfect harmony,” the engineering challenges involved in achieving it, and the profound impact that tuning systems have had on the art of musical composition throughout history.

4. WHAT HELP DO YOU NEED? WHERE ARE YOU STUCK? (For example, are you having trouble finding sources? Do you feel like your topic needs to be better scaled and scoped?). Let us know and crowd source some assistance!

N/A. The history of this subject is surprisingly rich and I in fact encountered more resources than I need to, much to my delight.