ANALYTICAL CASE-STUDY RESEARCH PROJECT: RESEARCH DESIGN WORKSHEET #1 (TOPIC)

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 (can be a working title): Re-inventing Harmony: a Chronological, Theoretical Analysis of the Temperament Systems

3. TOPIC (~200-300-word overview of your research project), which should include the following:

    I have had the following idea for a long while, but I never had the opportunity to convert it to a formal, fully-developed research paper. (I'll also briefly address the bullet points below.)

    At the core of musical expression, harmony serves as the bedrock that supports the intricate interplay of melodies and emotions. These complex relationships between notes weave a rich tapestry that enables composers to convey their artistic intent. Yet, translating the perfect "harmony" in one's mind into a physical, instrumental representation turned out to be particularly challenging engineering feat that, up to this date, still does not admit a perfect solution. Throughout history, musicians and theorists have endeavored to understand and achieve this ever elusive "perfect harmony" by developing a variety of **temperament systems**. As new system emerged, consequently, musicians' perceptions of "harmony" also evolved. For example, the *perfect fifth* interval has always been considered harmonious, but it took centuries for the *major third* and *major sixth* intervals to gain widespread acceptance among composers; and up to this date, *tritones* are still considered the "devil's tone."

    In this research paper, I will trace the historical progression of major temperament systems and examine the *tuning methods* corresponding to each (i.e., *what did music technicians do engineering-wise to follow the guidelines of these systems?*). More specifically, I will spend a significant portion of this research paper analyzing an ongoing debate over *Equal Temperament*,

a currently predominant tuning system that is hailed by many musicians due to its mathematical rigor but despised by many others due to its lack of "color."

Tentative: I will also attempt to introduce a mathematical framework that encapsulates the essential aspects of harmonization, and demonstrate its compatibility with our current interpretation of classical music. Again, I have been having this idea for a while, but I never formally analyzed it, and I look forward to seeing if it actually works out!

- FOCUS (who, what, where, when, etc.):
    a. Who: I will be doing these research. Most people I will be examining will be musicians and instrumental technicians in the history.
    b. What: I will be analyzing a series of *temperament systems*, also known as *tuning systems*. Think of the keys on a piano. Different *temperament systems* will tune the keys based on a slightly different method.
    c. Where: mostly in Europe, where most of these classical instruments were developed.
    d. When: all the way from ~7th century A.D. (*Pythagorean tuning*) to 20th century, if not 21st. Music is full of history!

- PROBLEM ORIENTATION/RESEARCH QUESTION(S) (what do you want to know? …what questions will you try to answer about your topic?)[1]:

    "Musicians' perception of harmony has been constantly evolving. What constituted these changes? Why would a different temperament system bring such drastic changes?"

    " Will we ever consider *tritone* harmonious? Throughout history, has it been considered as anything else but dissonance?"

    "What is causing the scholarly debate around *Equal Temperament*? What are its alternatives, what are their histories, and what are the advantages and disadvantages of each tuning system?"

    "While not in practice, does there exist a perfect temperament system *in theory?*"

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[1] An analytical case study has many aspects of a traditional research paper (e.g. historical background, previous studies, etc.), but includes developing specific research questions prior to doing the bulk of your research, which you will attempt to answer in your research and final product using variable data types related to anthropological-archaeological inquiry. Note that, your paper should NOT be a descriptive report (a simple collection of facts) and instead your research should seek to answer a question or questions (e.g. skateboard culture…why did it originate in California?)

BE MINDFUL THAT NOTHING HAPPENS INDEPENDENTLY/IN A VACUUM! Be aware of why changes (about your topic) happen over time…e.g. technological, economic, political, cultural, social drivers. Your analysis should include WHY you as the archaeologist think change over time happened with regard to your topic. (e.g. the effect Women's Suffrage Culture in the 1800s on women's clothing styles…or who was leading the movement and did that change over time – and if so, why?...or what are effects and outcomes of Women's Suffrage Culture on today's society?).

- DATA TYPES & SOURCES (where are you going to look for answers to your research questions?):

> I will be mostly looking at historical documents, e.g., primary sources. But since I would like to know more about scholarly debate, I need to know both sides' viewpoints, and that involves reading many scholarly articles.

- POSSIBLE PROBLEMS OR ISSUES THAT MAY COME UP DURING RESEARCH?

> My biggest concern, really, is the lack of structure of my research. Temperament system is a *big* topic and I need to carefully plan a roadmap to abide by the word limit, while also presenting everything I want in an organized manner. Not to mention that if I propose a mathematical framework, I also need to dedicate a significant portion of my research to justifying it.

- POSSIBLE RESEARCH OUTCOMES (what do you think the answers to your research question(s) may be? …or what are you expecting to find out during research?):

> Tough to predict the future…