Session 10

[10A] Music and Memory 3

SEOUL 11:00-12:30 Friday 8 Aug 2014

THE CONTOURS OF CATCHINESS, OR WHERE TO LOOK FOR A HOOK

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Time: 11:00

1. BACKGROUND: Given a piece of music, where should one look for the 'hook'? Conventional wisdom would say the chorus or refrain, but the story in the scientific literature is more nuanced. Fundamentally, hooks are triggers for recalling musical imagery to memory, and there is tension between theories that hooks' triggering power comes from repetition and theories that this power instead arises from sudden, striking conflicts between static, enculturated expectations from a piece of music (schematic expectation) and dynamically-updated expectations during particular listenings (adaptive expectation). At SMPC 2013, we presented a novel experimental design for studying hooks with a music recognition game for smartphones. We have since executed our first experiment with this design, and this presentation will highlight the key results.

2. AIMS: Our analysis considers the following hypotheses. 1. There are two primary 'catchiness contours' in pop music: (a) the ONE-MORE-TIME CONTOUR, in which the easiest-to-recall fragment returns one or more times, alternating with less memorable fragments, and (b) the ONE-TIME-ONLY CONTOUR, in which a single, striking moment dominates all other fragments. 2. Pieces of music with a one-time-only contour are more memorable overall than pieces of music relying on a one-more-time contour.

3. METHOD: Working with 14 000 song fragments, corresponding to the first 15 s of the major structural sections (verse, chorus, bridge, etc.) of 1600 popular songs, we used the game to collect response times for how quickly participants were able to recognise or to be confident that they did not recognise each fragment. Ratcliff's drift-diffusion model (1978) can incorporate both positive and negative responses into a single statistical analysis.

4. RESULTS: The experiment attracted 1600 participants and yielded 130 000 responses. As expected, there were significant differences in response times across different fragments ($p < .001$). We will present drift-diffusion models fit with the HDDM toolbox (Wiecki, Sofer & Frank, 2013) to explain these differences and by which cognitive mechanisms they relate to our principal hypotheses.

5. CONCLUSIONS: This experiment contributes to an important debate in the literature on the relationship between repetition and (violated) expectation and will be a critical foundation for future work on specific musical characteristics that stimulate long-term musical memory.