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Comment

Tightness and looseness: Where to find it and how to measure it?

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In "Musical engagement as a duet of tight synchrony and loose interpretability", Dr. Tal-Chen Rabinowitch offers a comprehensive review of the literature on social interaction and interpersonal synchrony with a focus on the potential of music as a particular interactional form. Social interaction, in all kinds of human arenas, enhances corporation and social bonding, with important evolutionary implications for our species. Social interaction, however, can also lead to "increased conformity, diminished creativity and even aggression" [11, p. 123] toward out-group members. Rabinowitch's proposal seeks to theorize what Christopher Small would call "musicking" [12] – and improvisational musicking in particular – as a means to balance the positive and negative effects of social interaction, by applying a "tight-loose" perspective from the social sciences. Due to its synchronicity, music is inherently tight and thus strengthens the positive outcomes of social interaction, but, proposes Rabinowitch, if one can insert more lose elements into its practices, one will also minimize the negative effects, leading to a "tolerant form of group membership" [11, p. 122]. Rabinowitch's proposal is bold because of its simplicity and generalizability. We have some concerns, however, about whether her proposal is also true and in the following point to what we believe are some of the most important nuances that must be addressed in order to make the proposal fully convincing.

Central to Rabinowitch's framework is interpersonal synchrony, which she defines as "coordinated temporal movement between two or more individuals". While concise, this definition misses some important aspects of how synchrony manifests. Operational definitions of synchrony in the literature commonly refer more specifically to temporal coordination where discrete events either align closely in time (e.g., notes in a chord) or where a shared tempo is maintained over a period of seconds or minutes. Synchrony itself can be tight(er) or loos(er). Danielsen et al. [4] showed that the perceptual center of a note (with which we try to synchronize) spans a range of timepoints (a "beat bin") that is wider for sounds with slow attacks and longer durations, and narrower for sounds with fast attacks and short durations. Musical genre modulates the width of the beat bin, with some genres (e.g., folk) tolerating a wider width than others (e.g., EDM or hip-hop; [5]). Clayton et al. [3] showed that musical traditions vary in how tightly players synchronize, with Malian Jembe coming in at one extreme with very tight synchrony and Japanese Gagaku coming in at the other extreme with very loose synchrony. In sum, Rabinowitch's association of synchrony with tightness oversimplifies the way synchrony manifests across instruments, genres, and traditions.

Rabinowitch's definition of synchrony refers specifically to temporal coordination of movement. However, several body systems are known to synchronize during musical interaction. Interpersonal synchrony arises in patterns of mutual gaze [1], cardiac activity [8], respiration [9], and brain activity [14], in addition to sound-producing and expressive movements [2]. Synchrony across body systems reflects and supports not only production of synchronized sounds, but also shared attention and shared fluctuations in arousal.

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Indeed, one might argue that the powerful experiences that musical interaction creates occur because music allows for synchrony between bodies that extends beyond the auditory and visual domains. Synchrony in bodily systems reflects shared experiences and shared appreciation of the music, and can happen regardless of the tightness or looseness of the musical structure and genre rules. In order to operationalize Rabinowitch's understanding of synchrony, it will therefore be important to work further on specifying which measurements (of which bodily systems) should serve as a baseline, why, and how they relate to one another as well as the music. This challenge is certainly not specific to Rabinowitch alone, but extends to much psychology of music.

While we have just shown that there are a number of loci and methods available for interpreting synchronization and hence that "tightness" probably needs a stricter definition, there also remains a question about the exact domain that is supposed to be tight or lose. Rabinowitch seems to be conflating the potential looseness or tightness of the music (as score-bound or as improvised) and the looseness or tightness of the musically engaged mind. In their excellent chapter, Adam Linson and Eric Clarke, writing of improvisation and distributed cognition, claim that: "The subjective experience of each musician in a collaborative improvisation at times overlaps with those of other musicians in the ensemble, yet their experiences also diverge." [10, p. 52]. This means that at times improvisers experience overlaps while at other times, not, which seems to imply that, as demanded by the performative and aesthetic situation, they are sometimes loose and at other times tight. Indeed, our own work on both expert "classical" musicians and free improvisers suggests that we must be careful not to romanticize either the classical score-bound, or the freely improvising form of musicking. Høffding's work on the phenomenology of musical absorption has described how score-bound musicians may "fly out" and have intensely absorbed experiences that momentarily and profoundly change basic structures of the mind, such as perception of time, space, and self [6]. Such states of mind are not tight; they are about as loose as they can get. Inversely, working with a freely improvising saxophonist, Høffding's analysis brings out that in order to improvise in an aesthetically meaningful way, the musician must possess a number of strictly rehearsed instrumental, bodily and mental techniques that he is highly aware of how and when to apply [7]. In the lack of an annotated score, these techniques provide the necessary mental and performative structure, and improvised performance could thus be considered rather strict. These considerations challenge Rabinowitch's idea that more improvised music as opposed to score-bound music will enhance tolerant form of group membership.

Rabinowitch describes the tight-loose framework with reference to interaction between music performers. Neither interaction between performers and audience, nor participatory music where there is little distinction between performers and audience seems to factor into the discussion. Yet these types of interaction tend to bring the largest groups of people together. Think of a pop concert where an audience of thousands participates in singing or dancing along with the music.[1] In its current form, the tight-loose framework does not readily account for the ability of some music to bring performers and audiences together in a participatory way. The main issue is that the "tight" features of such music seem to be central to its popularity and accessibility. Many of the most popular musical genres adhere to tight musical structures, for example, using standard song structures and a limited range of meters and harmonic contexts. This tightness makes popular music accessible to untrained listeners, who readily learn new songs that follow familiar rules, and are able to participate in performing the music by singing or dancing in along with it. Another issue is that the most straightforward way for untrained listeners to interact musically is to mimic and/or synchronize with the actions of others. While people without musical training are capable of interacting in more complex ways [13], this becomes difficult when group sizes are large. In sum, it seems that the tight and predictable features of popular music render it accessible to large numbers of people, including many who lack any formal musical training. This effect is suggestive of tolerant group membership, which challenges Rabinowitch's proposal.

While the points above are critical of Rabinowitch's proposal, they in no way undermine it. Rather, they jointly point out that, as always, the devil is in the detail: We must have nuanced and precise discussion and definitions of the domains and measurements of synchrony, of the various musical styles and of the phenomenology of looseness and tightness before we can ascertain if the proposal is a promising as it looks and advance a much needed debate.

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Declaration of competing interest

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[1] As an example, in July 2023, Seattle, Washington, recorded seismic activity equivalent to a 2.3 magnitude earthquake as a result of enthusiastic audience dancing during a Taylor Swift concert.

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