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Commentary on Justin London's MTO 0.2 article

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[1] I'd like to return to the recent analyses of Justin London's rhythm example by Robert Judd and myself. JL's Example 3 began with the 6 notes C D E F G A, where all notes had the same duration except the last (A) which was longer.

[2] The story so far: I looked at the phenomenal accent of each note and concluded that C had a "primacy" accent, a had a durational accent, and D, F, and A were candidates for harmonic accents. RJ concluded that the sequence could be parsed in either of two ways—either duple note groups with (metric) accents on D, F, and A, or triple note-groups with accents on E and A.

[3] The main difference between these two interpretations is the role of the primacy accent on the first note, C. My perceptual analysis referred to surface features heard on a first listening, while RJ performed a retrospective analysis of possible meters, arrived at after many listenings. In Judd's analysis, the primacy accent on C seemed relatively unimportant "in retrospect"—at least by comparison to the durational accent on A.

[4] The difference between these two analyses points to a fundamental difference between music theory and psychology, of the kind alluded to by Greg Sandell in his recent letter to the list. Music-theoretic analyses generally assume previous familiarity with and understanding of the music, and are often based on "isolating . . . passages of music and playing them several times" (a quote from Greg Sandell, somewhat out of context—the point I want to make is that the theorist hears or imagines the music many more times than does the average listener). Psychological or perceptual approaches often go to the other extreme, exploring spontaneous responses to unfamiliar music or sound sequences presented in the "constrained conditions of an experiment run in a lab." I believe that a balanced combination of these two approaches could lead to significant progress in music theory.

[5] The difference between the approaches of Robert Judd and myself also involved levels of analysis. My analysis was focussed on a relatively low or "primitive" level—phenomenal accent. Judd's concentrated on the next level up, the level of rhythmic strata (Yeston) or pulse sensations (my preferred term). In a systematic approach to rhythm, it may be useful to regard phenomenal accent and pulse sensations as independent and distinct, by first analysing phenomenal accents, and only then considering the resultant pulse sensations.

[6] Which of RJ's two solutions (duple, triple) is more likely? The relative importance of the two parsings may depend simply on the number of phenomenal accents that coincide with pulse events. This idea favors the duple grouping, as it involves more matching events than the triple grouping. Another effect is that of tempo. Research in rhythm perception (summarised by Fraisse, 1982) has suggested that pulse sensations are confined to a restricted range of tempi centered on about 100 beats per second ("moderate tempo"), and that most perceived pulses lie between a half and twice that value, that is, between about 50 and 200 beats per minute. According to this theory, at slow tempi, the RJ's duple note groups will be closer to moderate tempo, and will probably be preferred for that reason. At fast tempi, the triple note groups are more likely.

[7] The long-term aim of my research in rhythm is to develop an algorithm that predicts perceptual properties of simple rhythms in notated or performed music by the systematic application of a minimum number of specific rules or principles. Principles may be either perceptually "primitive" or specific to western music. The validity of the rules or principles may be checked by comparing predictions of the model with corresponding experimental results. This approach differs from most

other music theory, in which the validity of analytic rules or principles is primarily determined by the perception and intuition of theorists. Traditional music theory nevertheless remains the primary foundation of, and motivation for, the model—as well as most other research in music perception.

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Works Cited

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