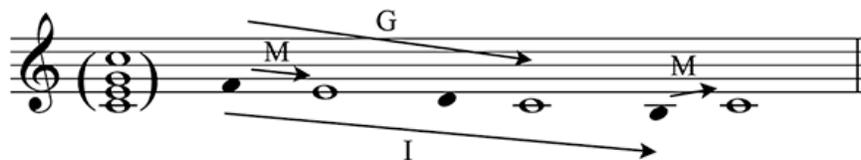


**MTO 18.3 Examples: Hatten, Musical Forces and Agential Energies**

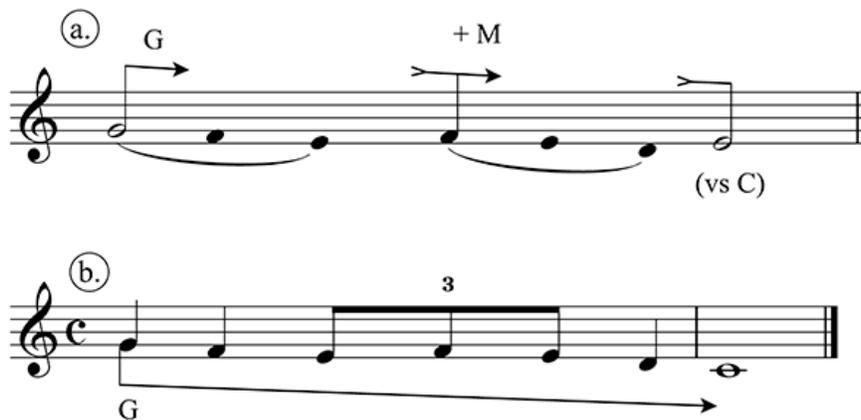
(Note: audio, video, and other interactive examples are only available online)

<http://www.mtosmt.org/issues/mto.12.18.3/mto.12.18.3.hatten.php>

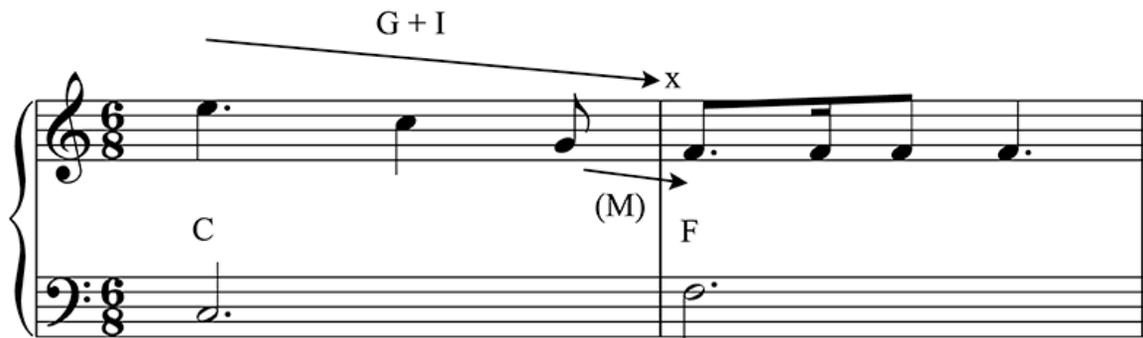
**Example 1.** Arrows indicate the directional forces of gravity (G), magnetism (M), and inertia (I)



**Example 2.** Musical forces are constrained by patterning (a. motivic and b. rhythmic), which predicts alternate closures for the same pitch pattern



**Example 3.** Musical forces are constrained by harmonic motion; the root of a chord creates an alternative platform for gravity



Example 4. Musical forces cannot account for an upward leap, which counteracts magnetism, gravity, and inertia

Musical notation for Example 4, showing a melodic line in 3/4 time. The notation includes a circled 'vs' followed by 'G, M, & I', and arrows pointing to 'M', 'G', and '+ I + M'.

Example 5. "Winding down" of energy in a passage from the third movement of Beethoven's String Quartet in B-flat major, op. 130

Musical score for Example 5, showing a passage from the third movement of Beethoven's String Quartet in B-flat major, op. 130. The score is in 3/4 time and features four staves. The notation includes dynamics such as *p*, *pp*, and *sempre pp*, as well as articulation marks like *pizz.* and *arco*. The passage is characterized by a "winding down" of energy.

**Example 6.** Friction as an opposing agential force: the pedal point vs. rising theme in the opening of Brahms's First Symphony

**Un poco sostenuto**

Violin I  
*f espr. e legato*

Violin II  
*f espr. e legato*

Viola  
div.  
*f espr. e legato*

Violoncello  
*f espr. e legato*

Contrabass  
*f pesante*

**Example 7.** Repulsion as contra-magnetic force generated by a contrapuntal dissonance: a suspension involving a minor second

2 ——— 3

(7 ——— 6)

**Example 8.** Repulsion as contra-magnetic from a P4 dissonance to a d5 resolution, which in turn resolves to two magnetic poles

Vo - ca, Vo - ca me, Vo - ca, Vo - ca me,

(S.)  
(A.)

P4 → d5 → M3

Figure 1. Various proposed musical forces and their implied source(s)

<u>virtual environment</u>	<u>contextual agency</u>	<u>virtual agent (subject, protagonist)</u>
<p><b>Gravity:</b> force that pulls downward toward some platform</p>		<p><b>Initiatory energy:</b> as needed to leap or step against gravity or magnetism, or to counter inertial stasis</p> <p>... creates ...</p>
<p><b>Inertia:</b> <i>not</i> a force; rather, an acknowledgment that momentum from a virtual agent will tend to continue, unless impeded by other forces</p>		<p><b>Implicative momentum:</b> the further injection of energy needed to build up to a continuous motion, which can then imply inertia; may be a simple process, (e.g., a line) or a pattern (e.g., a sequence)</p> <p>... which may require ...</p>
	<p><b>Friction:</b> drag/pull; (may imply a <i>second virtual agent</i>)</p>	<p><b>Further force</b> to overcome environmental forces ... or <i>agential conflict</i></p> <p>... possibly involving ...</p>
<p><b>Magnetism:</b> attraction toward a stable center; decreases with distance (may imply a <i>second virtual agent</i>)</p>		<p><b>Repulsion:</b> resistance against that center, forcing a <i>second virtual agent</i> to move.</p>

Example 9. Various impacts imply various degrees of rigidity among platforms

- a. Rigid platform
- b. Flexible platform
- c. Permeable platform

The image shows three musical staves labeled (a), (b), and (c).  
 (a) Rigid platform: A treble clef staff in 3/4 time with a dynamic marking of *ff*. It features a series of eighth notes that rise in pitch and amplitude, followed by a sharp downward arrow indicating a 'splat' impact.  
 (b) Flexible platform: A treble clef staff in 6/8 time. It features a series of eighth notes that rise in pitch and amplitude, followed by a downward arrow indicating a 'rebound' impact where the notes continue with a slight dip.  
 (c) Permeable platform: A treble clef staff in 2/4 time. It features a series of eighth notes that rise in pitch and amplitude, followed by a downward arrow indicating a 'permeable' impact where the notes continue without a significant change in pitch or amplitude.

**Example 10.** Agential “braking” of momentum prior to impact with a gravitational platform

- a. Decrescendo
- b. Ritardando
- c. Written-out ritardando (durational expansion)
- d. Motivic liquidation

The musical notation for Example 10 is divided into two staves. The first staff contains segments a, b, and c. Segment a shows a decrescendo with a wedge-shaped dynamic marking. Segment b is marked with 'rit.' and a dashed line. Segment c is marked '(written-out rit.)' and shows a long note with a decrescendo. The second staff contains segments d and e. Segment d is marked '(liquidation)' and shows a series of notes with a long arrow underneath. Segment e is marked 'rit.' and '(Ant.)' and shows a long note with a decrescendo.

**Example 11.** Agential (“ willful” ) intensification of environmental forces

- a. Dynamic intensification supporting magnetism
- b. Accelerated intensification supporting gravity

The musical notation for Example 11 is on a single staff. Segment a shows a dynamic intensification from 'mp' to 'ff' with a wedge-shaped dynamic marking. Segment b is marked '(accel.)' and shows a series of notes with a long arrow underneath.

**Example 12.** Agential (“ willful” ) metric re-orientation of the rhythmic motive that opens the third movement of Brahms’s Symphony no. 3

The musical notation for Example 12 is in 3/8 time and consists of two systems, a and b. Both systems are marked 'Poco Allegretto' and 'mezza voce'. System a shows a Vcl. part with a 'pizz.' marking and a Cb. part with a 'p' dynamic. System b shows a Vcl. part with an 'espr.' marking and a 'pizz.' marking, and a Cb. part with a 'p' dynamic. Both systems show a rhythmic motive that is re-oriented in system b.

Example 13. Environmental musical forces as implied in an atonal score (opening theme from Schoenberg, *Drei Klavierstücke*, op. 11, no. 1)

Mäßige

Example 14. Hatten, *Wordless Carol*, a *siciliana* for Steve Larson (score and recording)

Wordless Carol  
a siciliana for Steve Larson