

# Motor Consciousness during Intention-Based and Stimulus-Based Actions...

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Full title: Motor Consciousness during Intention-Based and Stimulus-Based Actions: Modulating Attention Resources through Mindfulness Meditation.

Mindfulness-Based Stress Reduction meditation (MBSR) may offer optimal performance through heightened attention for increased body consciousness. To test this hypothesis, MBSR effects were assessed on the simple task of lifting an object. A dual task paradigm was included to assess the opposite effect of a limited amount of attention on motor consciousness. In a stimulus-based condition, the subjects' task was to lift an object that was hefted with weights. In an intentional-based condition, subjects were required to lift a light object while imagining that the object was virtually heavier and thus, adjust their grip voluntarily. The degree of motor consciousness was evaluated by calculating correlation factors for each participant between the grip force level used during the lift trial ("lift the object") and that used during its associated reproduce trial ("without lifting, indicate the force you think you used in the previous trial"). Under dual task condition, motor consciousness decreased for intention- and stimulus-based actions, revealing the importance of top-down attention for building the motor representation that guides action planning. For MBSR-experts, heightened attention provided stronger levels of motor consciousness; this was true for both intention and stimulus-based actions. For controls, heightened attention decreased the capacity to reproduce force levels, suggesting that voluntary top-down attention interfered with the automatic bottom-up emergence of body sensations. Our results provide strong arguments for involvement of two types of attention for the emergence of motor consciousness. Bottom-up attention would serve as an amplifier of motor-sensory afferences; top-down attention would help transfer the motor-sensory content from a preconscious to a conscious state of processing. MBSR would be a specific state for which both types of attention are optimally combined to provide experts with total experiences of their body in movement.

Front Psychol. 2012;3:290. Epub 2012 Sep 11. Delevoeye-Turrell YN, Bobineau C. URECA Laboratory, Université de Lille 3, Université Lille Nord de France Villeneuve d'Ascq, France.

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