



1 Weight illusions

Workshops and Tutorials will take place on Monday, June 22, 2015 during the IEEE World Conference 2015 in Chicago, USA.

General Information:

Please insert any URL link to workshop/tutorial if available

Website: <https://sites.google.com/site/ieee2015weightillusionworkshop/>

Type of Activity:

Please select:

- Panel Workshop¹
- Open Workshop²
- Tutorial³

Proposed Duration:

Please select:

- Half day
- Full day

Preferred time:

Please select:

- Morning
- Afternoon

¹ The organizer proposes a topic, panel of speakers who have agreed to participate, a schedule and description

² The organizer proposes a topic, which (after approval) is disseminated openly; interested speakers apply to the organizer to participate. This style of workshop is ideal for exploring the degree of interest and activity in a new area.

³ Tutorials are self-contained seminars of established research areas that should provide training within and perhaps on periphery of traditional haptic related topics They should be focused on the proposed topic and should be presented by two or three experts in the field.

2 ABSTRACT

When lifting an object and judging its weight, individuals will often experience that something is lighter or heavier than it actually is. The subjective nature of our perceptions of heaviness is such that identically-weighted objects can be made to feel as if they have substantially different weights from one another. In the size-weight illusion, for example, small objects feel substantially heavier than equally-weighted large objects. And, in the analogous material-weight illusion, objects which appear to be made from a low-density material will feel heavier than objects of the same mass which look as if they are made from a higher-density material. At a descriptive level, the illusory misperception of weight contrasts with their prior expectations; the light-looking object is heavier than the lifter expected, causing them to experience it as being heavier than it actually is (and vice versa). However, the mechanism behind these illusions is far from clear. The talks in this workshop will discuss current opinions on the cause and function of weight illusions, in the hope of highlighting factors which may influence the design of haptic interfaces.

3 AUDIENCE

Describe here the audience the workshop/tutorial is addressed to.

This workshop will be aimed at engineers with an interest in force perception and object interaction, and Psychologists/physiologists who are interested in perception of haptics and object weight

4 SPEAKERS (tentative program)

Insert here a list of potential speakers, including the name, affiliation, and tentative title of talk.

Talk 1- **Myrthe Plaisier**, VU University Amsterdam: “Visual and haptic cues for mass perception”

Talk 2 - **Joachim Hermsdörfer**, Technical University Munich: “Neural processing of weight illusions and finger force adaptation (as revealed by patients with brain damage)”

Talk 3 - **Lee Baugh**, University of South Dakota: “Heavy Weight Technology: Cognitive attribution of the source of an error induces a novel motor illusion”

Talk 4 - **Gavin Buckingham**, Heriot-Watt University: “Weight illusions and mass discrimination in an individual with peripheral deafferentation and a group of upper-limb prosthetic users”

Talk 5 - **Christian Wolf**, Justus-Liebig-Universität Gießen: “A mass-density model can explain the size-weight illusion”

Talk 6 - **Vincent Hayward**, Université Pierre et Marie CURIE: “Aspects of the mechanics and tribology of the fingertip relevant to the perception of mechanical loads”



5 ORGANIZERS

Insert here details of each organizer as follows

Dr Gavin Buckingham, Heriot-Watt University

Dr Gavin Buckingham received his PhD from the University of Aberdeen in 2008. After completing his PhD, he moved to Canada, first as a Commonwealth Postdoctoral Fellow and then a Banting Postdoctoral Fellow at the Brain and Mind Institute at the University of Western Ontario under the supervision of Prof. Mel Goodale. During that time he became interested in how individuals perceive and object's weight, and how grip and load forces are controlled when lifting objects. In 2013, he was appointed as an Assistant Professor in the Psychology Department at Heriot-Watt University in Edinburgh, UK. He has published over 20 papers, and presented his work at almost 50 workshops, conferences, and seminars. He was recently elected to the Royal Society of Edinburgh's Young Academy of Scotland, where he contributes to the Research the Headline blog.

6 CALL FOR CONTRIBUTIONS (OPTIONAL, Compulsory for Open Workshop)

Organizers can foresee a call for contributions, to allow participants to introduce their own research either in the form of a poster (this might allow some attendees to claim for cost reimbursement at their institutions if they are attending a Workshop/Tutorial only without presenting papers at the conference), or to solicit contributions for an oral presentation for Open Workshop.

Can participants submit abstracts related to their research for presentation at the Workshop/Tutorial? NO

If YES to the above question, please provide the following information:

SUBMISSION INSTRUCTIONS:

- Type of submission (abstract, other type, etc.)
 - Type of foreseen presentation (talk, poster)
 - Timeline for internal revision and acceptance of abstracts
 - Abstract submission deadline: Insert here tentative date mm/dd/yyyy
 - Notification of acceptance: Insert here tentative date mm/dd/yyyy
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For further info: please contact WHC2015 Workshop/Tutorial chairs at Workshops@haptics2015.org

Workshops and Tutorials Chairs

Rob Gray (Arizona State University Polytechnic, USA)

Mounia Ziat (Northern Michigan University, USA)

Antonio Frisoli (Scuola Superiore Sant'Anna, Italy)