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Editorial: Building Up the Community: Interdisciplinary Bridges and Open Science

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Dialogues

The scientific dialogue in this newsletter's issue, proposed by Janet Wiles, revolves around the question "Will social robots need to be consciously aware?". Responses are provided by Axel Cleeremans, Yasuko Kitano, Cornelius Weber and Stefan Wermter, Justin Hart and Brian Scassellati, Juyang Weng, Guy Hoffman and Moran Cerf. Several dimensions of the question stand out. First, as we are very far from understanding what "consciousness" is, it appears that building robots capable of various forms of self- and other- awareness, and importantly how they can develop these capabilities progressively, can be very useful in the quest to unveil the underlying mechanisms. Second, as consciousness is a multiscale complex systems, multiple approaches and perspectives need to be taken in this process of robot building. Third, when one looks at applications, it is the function, and not the nature, of consciousness which becomes the relevant angle of analysis, and several ethical questions arise.

Then, a new dialog is initiated by Stéphane Doncieux on the topic of representational redescription. It has long been known in AI that having a good representation is key for machines to solve complex problems. However, so far good representations have been pre-programmed by engineers. What technical approaches could we imagine to allow machines to select, and even more important to find, new spaces of representations? Are techniques like deep learning general enough for realising such a challenge for life-long learning robots? Do we need other approaches such as Darwinian mechanisms operating in the brain, like in neural Darwinism? Those of you interested in reacting to this dialogue initiation are welcome to submit a response by October 30th, 2015. The length of each response must be between 600 and 800 words including references (contact pierre-yves.oudeyer@inria.fr).

New AMD TC Chair

I am writing this editorial not only as editor of the newsletter, but also as the new Chair of the IEEE CIS Technical Committee on Autonomous Mental Development. I am very honoured to be appointed to this job, and I would first like to thank Matthew Schlesinger and my other predecessors for the amazing work they have been doing to stimulate the community. As we are still a developing community :), there are significant organisational and strategic challenges that still need to be addressed, and to which I will do my best to contribute.

First, and due to the fundamental interdisciplinary character of our field, there are many research communities who have been working on topics related to computational modelling of development in machines and animals, but who have been striving in a relative isolation. We need to build bridges and connections with research communities such as connections modelling, cognitive systems and AI, evolutionary systems, psychology and neuroscience.

As a first action, I have proposed the creation of a new task force of the AMD TC related to a field I believe should become very important in the years to come: Evolutionary-Developmental robotics. This task force's chair and vice-chairs are Jean-Baptiste Mouret, Jeff Clune and Stéphane Doncieux, who are among the most creative researchers in this area. A second action is to strengthen the link with a solid community of researchers who for years have been developing connectionist constructivist models of cognitive development in the connectionist communities, and I am happy

that Gert Westermann and Denis Mareschal, key actors of this trend, are chair and vice-chair of the TF on Developmental Psychology.

As a second action and in this context, the TC continues to contribute to the reflection about the evolution of the scope of the TAMD journal and the TC itself (and to the change of their names), in collaboration with the new editor Angelo Cangelosi, whose great experience will be very helpful to continue to strengthen the journal. An evolution will be to cover topics beyond developmental issues (in practice, the journal has been accepting around 1/3rd of papers not focused on development, but on cognition in general). The idea is to keep development as a very strong component, but contextualized with other work to build connections (See the recent editorial by Angelo in TAMD vol 7. issue 1).

Second, we need flexible tools allowing the community to discuss and share ideas in an open manner. A first step in this direction is the opening of a web space for open discussion, based on the Discourse forum technology, which allows the easy creation of multimedia exchanges, and can be used to foster open science discussions. The web pages of the AMD TC and TFs are now hosted there. Anyone wanting to start a dialog about any topic linked to computational modelling of development, or related to the organisation of the community, can use the tool. Begin the discussion at: www.icdl-epirob.org/amdtc

The community has also now an active Twitter account that everyone shall use to give and read news: @DevRobNews (thanks a lot to Matthias Rolf and Alessandra Sciutti for animating the Web TF!). See also the ICDL-Epirob twitter account: @ICDL_Epirob2015

Call for candidate for becoming the new editor of the newsletter

As I have been editor of the newsletter for around 8 years, and I have now the AMD TC Chair duty, it is now time for other ideas and energies to take the lead of the newsletter. This has been a fantastic job, especially in the organisation of scientific dialogues with many of the major thinkers of our community. If you are interested in the job, please send your application to pierre-yves.oudeyer@inria.fr, which will then be reviewed by the members of the TC.

ICDL-Epirob 2015 and call for organisation of next editions

This summer, the ICDL-Epirob conference is taking place at Brown University, Providence, USA, August 13th-16th, and will feature three outstanding keynote speakers: Dare Baldwin (Univ. Oregon, US), Kerstin Dautenhahn (Univ. Hertfordshire, UK), and Asif Ghazanfar (Princeton Univ., US). This year the general chairs are Dima Amso and Matthew Schlesinger, and the program chairs are Anne Warlaumont and Clément Moulin-Frier, showing a significant emphasis on developmental psychology and neuroscience. This is in practice embodied through a great initiative by Matthew Schlesinger and Anne Warlaumont who have proposed the Babybot Challenge at ICDL-Epirob to strengthen the link between scientists studying development in humans and in artificial systems. The challenge is to select from a list of three infant studies and design a model that captures infants' performance on the chosen task. The results will be announced during the conference.

In 2016, ICDL-Epirob is planned to take place in Paris, France, thanks to the proposal of Philippe Gaussier and his colleagues at University Cergy-Pontoise. For the following years, all applications for organisation are welcome!

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