Biosemiotic Achievement Award for the Year 2015

Established at the annual meeting of the International Society for Biosemiotic Studies (ISBS) on July 3rd 2014, and in conjunction with Springer Publishing, publishers of the Society’s official journal, Biosemiotics, the Annual Biosemiotic Achievement Award seeks to recognize those papers published in the journal that present novel and potentially important contributions to the ongoing project of biosemiotic research, its scientific impact and its future prospects (as detailed at http://www.biosemiotics.org/statutes_of_the_annual_biosemiotic_achievement_award.pdf).

As one might expect, this year there were a wealth of interesting and important papers published in Biosemiotics that were eminently worthy of the prize. The job of the Selection Committee, then, was far from an easy one – many excellent papers with which we could find no fault were considered, and yet because, by necessity, only one paper could be given the award, the Committee arrived at its decision to bestow the award on Lynn Chiu and Scott F. Gilbert’s “The Birth of the Holobiont: Multi-species Birthing Through Mutual Scaffolding and Niche Construction” (published in the August 2015 issue of Biosemiotics, Vol 8 (2), pp. 191–210) in recognition of the following four aspects of its particularly unique importance and excellence:

**Importance to the Future Development of Biosemiotics**

Although the concept of a “holobiont” is not a new one in biology, and goes back in its present usage at least to Lynn Margulis’ discussion of the concept in *Symbiosis as a Source of Evolutionary Innovation: Speciation and Morphogenesis* (1991), in the paper under discussion, authors Chiu and Gilbert have revealed the potential centrality of the concept for any view of the world that, like biosemiotics, takes as primary the "merging of [organisms] and ecology in inter-species webs of mutual and reciprocal communication" (p. 205).

"Holobionts," write the authors, “are multicellular eukaryotes with multiple species of persistent symbionts. They are not individuals in the genetic sense — [in that they are not] composed of and regulated by the same genome—but they are anatomical, physiological, developmental, immunological, and evolutionary units, evolved from a shared relationship between different species…[Within,] some populations [will be] waxing and waning in numbers, new ones immigrating, and old ones going extinct…[while at the same time, all] are constantly constructing and modifying each
other as local niches that structure developmental, ecological, and evolutionary processes, including those for developmental scaffolding” (p. 191; 194).

With its emphasis on the recursively constructive interplay of developmental scaffolding and reciprocal niche construction – both of which require semiotic interaction for their successful realization in living systems, Chiu and Gilbert argue in “Birth of the Holobiont” that: (1) understanding such holobiont systems as evolutionary units of selection per se, and (2) understanding the intricate developmental and semiotic processes that intersect in such systems as their “causes of development” per se can help to reframe and to extend science’s existing understandings of “individuality” and “causality” in ways that far more accurately reflect the emergent, processual, interactive and, above all, biosemiotic, logic of living being.

**Potential for Synthesis Between Biosemiotics and Other Disciplinary Perspectives**

Appearing in *Biosemiotics’* August 2015 “Special Issue On Semiotic Scaffolding” (guest edited by Jesper Hoffmeyer), Chiu and Gilbert’s article was notable for its almost total lack of overt reference to any existing work in biosemiotics – including Hoffmeyer’s, despite the fact that the concept of reciprocal, generative scaffolding clearly resonates with Hoffmeyer’s own investigations into the ineliminable role of semiosis in such processes. Indeed, of the over 100 scientific and scholarly references cited in the article, none at all came from contemporary biosemioticians, or from the authors most commonly cited in the biosemiotic literature, such as Bateson, Sebeok, Uexküll or Peirce. Rather than finding this situation to be a shortcoming of the article, the Selection Committee actually considered it to be one of its most gratifying strengths – suggesting that both contemporary Philosophy (which is first author Chiu’s discipline) and Evolutionary Developmental Biology (which is second author Gilbert’s field of expertise) are, as the result of their own independent investigations, converging upon the same kinds of insights into the nature of living systems as those that Biosemiotics has been advancing for quite some time now. Publishing the work of such scholars from “outside” of the established Biosemiotics community, so as to initiate dialogue between the disciplines, has always been one of the primary goals of the journal *Biosemiotics*, and the Selection Committee feels that “The Birth of the Holobiont” is an outstanding exemplar of just this kind of dialogue-starter.

**Contribution to Bringing New Young Scholars to the Field**

Lynn Chien-Hui Chiu was a Ph.D. Candidate in the Philosophy of Biology at the University of Missouri and a Konrad Lorenz Institute Fellow at the time of the writing of this article, and is now employed as a CNRS sponsored post-doc researcher at the University of Bordeaux.

Scott F. Gilbert is the Howard A. Schneiderman Professor of Biology (emeritus) at Swarthmore College, where he has taught developmental genetics, embryology, and the history and critiques of biology, and is also a Distinguished Professor at the University of Helsinki (Finland). He is the author of numerous scientific articles dating back to the
1970s, and his textbook *Developmental Biology* is now in its tenth edition, and is one of the most widely used textbooks in the field.

Such collaboration between a long-established researcher who is still yet determined to push further the boundaries of his field, and a promising young scholar who will continue that exploration into the generation that follows is, likewise, precisely the kind of work that *Biosemiotics* wants to reward and encourage. This, too, then, played a role in helping the Selection Committee choose from among the very many excellent papers that were published in the journal last year, to recognize the one that best achieved multiple desired outcomes of the Biosemiotics Annual Achievement Award initiative.

**Opportunity for Development by and within the Biosemiotic Perspective**

As noted earlier, the ‘take-away lesson’ of Chiu and Gilbert’s “The Birth of the Holobiont” is that “the concept of a holobiont provides an excellent platform to demonstrate [how the study of the] reciprocal construction and scaffolding (i.e. the mutual construction of local niches and scaffolding of development) between multiple species [can] bring out underappreciated and unexplored features of each process” (p. 191).

What remains, indeed, is to discover and to articulate the *semiotic* processes and relationships that allow for such reciprocal scaffolding and niche construction – and this is a project that biosemiotics as a discipline is both uniquely situated and uniquely oriented to do. So by solidifying the arguments for a paradigm-change in the understanding of causation in biology, and of individuality in philosophy, Chiu and Gilbert’s “The Birth of the Holobiont” suggests that the era in which biosemiotic ideas may get a hearing may finally be at hand.

We congratulate Lynn Chiu and Scott Gilbert as the recipients of the first Annual Biosemiotics Achievement Award, each of whom will be awarded a book voucher from Springer Publishers worth EUR 250, and an electronic subscription to *Biosemiotics* for 1 year.

*The Members of the 2015 Biosemiotic Achievement Award Selection Committee*

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Karel Kleisner (*Biosemiotics*)
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