

# Publication Review

## Recent books and articles related to constructivist approaches

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**> Purpose** • This section lists publications related to constructivist approaches – constructivism, second-order cybernetics, enactivism, non-dualism, biology of cognition, etc. – that recently have been published elsewhere, and which the reader of the journal might find interesting. **> Content** • The entries are ordered alphabetically and clustered according to their respective primary disciplinary backgrounds. The list of publications can also be found in the journal's database at <http://www.constructivistfoundations.info/bib/>. The section will be regularly updated so that over time this will become a standard reference for constructivist literature. **> How to contribute** • To have your constructivism-related publications listed in this section, send an email to [ariegler@vub.ac.be](mailto:ariegler@vub.ac.be). Please format your list in the same way as the entries in this section. Add information about the disciplinary background, the abstract (which should describe the link to constructivist approaches), and, optionally, a URL that points to the full-text version.

### Art

**> Dell'Aversano C. (2009) The homeland of reconstruction: Snapshots from Faërie. *Personal Construct Theory & Practice* 6: 3–14.**

>> This paper is part of an ongoing reflection about the way PCT (Personal Construct Theory) can illuminate artistic theory and practice, and aid progress in artistic pedagogy. It is, quite uncharacteristically, written from my own perspective as a practicing artist, and attempts to map the construct system which forms the foundation of my aesthetic world and to link it to my personal construct system in general. Why do I like what I like? Why do I make art the way I do? How can my work can be understood as an attempt to elaborate and define my construct system? <http://www.pcp-net.org/journal/pctp09/dellaversano09.html>

### Artificial intelligence

**> De Loor P, Manac'h K. & Tisseau J. (2009) Enaction-based artificial intelligence: Toward co-evolution with humans in the loop. *Minds and Machine* 19(3): 319–343.**

>> This article deals with the links between the enaction paradigm and artificial intelligence. Enaction is considered a metaphor for artificial intelligence, as a number of

the notions which it deals with are deemed incompatible with the phenomenal field of the virtual. After explaining this stance, we shall review previous works regarding this issue in terms of artificial life and robotics. We shall focus on the lack of recognition of co-evolution at the heart of these approaches. We propose to explicitly integrate the evolution of the environment into our approach in order to refine the ontogenesis of the artificial system, and to compare it with the enaction paradigm. The growing complexity of the ontogenetic mechanisms to be activated can therefore be compensated by an interactive guidance system emanating from the environment. This proposition does not however resolve that of the relevance of the meaning created by the machine (sense-making). Such reflections lead us to integrate human interaction into this environment in order to construct relevant meaning in terms of participative artificial intelligence. This raises a number of questions with regards to setting up an enactive interaction. The article concludes by exploring a number of issues, thereby enabling us to associate current approaches with the principles of morphogenesis, guidance, the phenomenology of interactions and the use of minimal enactive interfaces in setting up experiments which will deal with the problem of artificial intelligence in a variety of enaction-based ways.

<http://hal.archives-ouvertes.fr/hal-00440441/fr/>

### Communication science

**> Scholl A. (2010) Systemtheorie und Ethik [System theory and ethics]. In: Schicha C. & Brosda C. (eds.) *Handbuch Medienethik. VS Verlag für Sozialwissenschaften, Wiesbaden.***

>> Unlike constructivist approaches, Luhmann's theory of social systems seems to ignore ethical problems within society. However, a system-theoretical perspective on ethics and their societal function(s) may help to clarify what ethical norms can contribute to society and what are the limits of ethical norms as a way of integrating society. The author reconstructs Luhmann's understanding of norms, morale, and ethics. In a second step several system-theoretical approaches to the relevance of ethics in journalism are discussed. It is but Siegfried Weischenberg's effort to integrate system-theoretical and constructivist perspectives of ethics and re-sponsibility which seems to be both fertile for and applicable to journalistic practice, as Weischenberg strictly relates individual responsibility to social constraints without reducing this complex to the one or the other side. Although system theory does not contribute directly to the development and justification of ethical or moral norms, it marks their function and their limitations from the perspective of a second-order-observation.

## Cybernetics

> Cariani P. A. (2009) The homeostat as embodiment of adaptive control. *International Journal of General Systems* 38(2): 139–154.

>> W. Ross Ashby was a founder of both cybernetics and general systems theory. His systems theory outlined the operational structure of models and observers, while his cybernetics outlined the functional architecture of adaptive systems. His homeostat demonstrated how an adaptive control system, equipped with a sufficiently complex repertoire of possible alternative structures, could maintain stability in the face of highly varied and challenging environmental perturbations. The device illustrates his 'law of requisite variety', i.e. that a controller needs at least as many internal states as those in the system being controlled. The homeostat provided an early example of how an adaptive control system might be ill-defined vis-à-vis its designer, nevertheless solve complex problems. Ashby ran into insurmountable difficulties when he attempted to scale up the homeostat, and consequently never achieved the general purpose, brainlike devices that he had initially sought. Nonetheless, the homeostat continues to offer useful insights as to how the large analogue, adaptive networks in biological brains might achieve stability.

> Asaro P. M. (2009) Information and regulation in robots, perception and consciousness: Ashby's embodied minds. *International Journal of General Systems* 38(2): 111–128.

>> This article considers W. Ross Ashby's ideas on the nature of embodied minds, as articulated in the last five years of his career. In particular, it attempts to connect his ideas to later work by others in robotics, perception and consciousness. While it is difficult to measure his direct influence on this work, the conceptual links are deep. Moreover, Ashby provides a comprehensive view of the embodied mind, which connects these areas. It concludes that the contemporary fields of situated robotics, ecological perception, and the neural mechanisms of consciousness might all benefit from a reconsideration of Ashby's later writings.

## Education science

> Dykstra D. I. Jr. & Sweet D. R. (2009) Conceptual development about motion and force in elementary and middle school students. *American Journal of Physics* 77(5): 468–476.

>> Methods of physics education research were applied to find what kinds of changes in 4th, 6th, and 8th grade student understanding of motion can occur and at what age. Such findings are necessary for the physics community to effectively discharge its role in advising and assisting pre-college physics education. Prior to and after instruction the students were asked to carefully describe several demonstrated accelerated motions. Most pre-instruction descriptions were of the direction of motion only. After instruction, many more of the students gave descriptions of the motion as continuously changing. Student responses to the diagnostic and to the activity materials revealed the presence of a third "snapshot" view of motion not discussed in the literature. The 4th and 6th grade students gave similar pre-instructional descriptions of the motion, but the 4th grade students did not exhibit the same degree of change in descriptions after instruction. Our findings suggest that students as early as 6th grade can develop changes in ideas about motion needed to construct Newtonian-like ideas about force. Students' conceptions about motion change little under traditional physics instruction from these grade levels through college level.

> Berbegal A., Boumard P. & Sabirón F. (2009) Inside the companionship for minors: Troubles and weaknesses of an ethnographic approach to deviance and education. In: Richards L. (ed.) *Methods in Practice*. Sage, London.

>> Based on an ethnographic research carried out from 2004 to 2008 in Spain, this article is about the understanding of the companionship for minors with correctional and educational intervention in Juvenile Court. The first ethnographic affiliation aspired to become "medium" in search of an humanistic epistemology which admits its physical, psychological, sociological and political dimensions and shapes a critical deconstruction of certain scientific repre-

sentations of educational phenomena. The epistemological evolution was the following: Phenomenology, constructivism and complexity. The fieldwork was thought as "situation-in-life": the whole research and the progressive research subject construction were driven by this "situation-in-life" itself. <http://www.uk.sagepub.com/richards/homeP4.htm>

> Fuller R., Campbell T., Dykstra D. & Stevens S. (2009) *College teaching and the development of reasoning*. Information Age Publishing.

>> This book is an update of the workshop that introduced the work of Jean Piaget to the science teaching community in the U.S. The result of Robert Karplus' introduction of Piaget's theory and observations to the Physics community have resulted in the formation of a whole new sub-discipline named physics education research (PER). The theoretical underpinnings of Piaget's theory of cognitive equilibration are described and contrasted with the work of Vygotsky. Piaget's ideas spawned a number of Piagetian-based course programs in institutions of higher education in the U.S. which are described in the book. Examples of work in disciplines beyond the sciences from such programs are given.

> Masciotra D. & Medzo F. (2009) *Développer un agir compétent. Vers un curriculum pour la vie [The Development of Competent Action: Toward a Curriculum for Lifelong Learning]*. De Boeck, Brussels.

>> Grounded in the perspective of enaction, this book revisits the notion of competency, replacing it with that of competent situated action, and takes a critical look at current curriculum reforms and the ongoing debate on the competency-based approach. The distinguishing features of the book include the clarity, simplicity and accessibility of the language, the provision of numerous examples that facilitate the comprehension of complex concepts, and the coherence of the theoretical framework underlying the notion of competent situated action. Practitioners in the field of general or vocational education can easily relate to the book because of its pragmatic perspective and emphasis on situated experience.

> Masciotra D., Medzo F. & Jonnaert P. (2010) *Vers une approche située en éducation: Réflexions, pratiques, recherches et standards [Toward a Situations-based Approach in Education: Reflections, Practices, Research and Standards]*. ACFAS, Montreal.

>> A situated or situations-based approach is becoming increasingly adopted by education reforms as either a continuation of or an alternative to the competency-based approach. In fact, recent curriculum reforms have begun to organize the content of their programs of study around classes of situations. While proponents of the competency-based approach generally view competency as the mastery of decontextualized knowledge, advocates of a situations-based approach define it in terms of the mastery of situations. In this latter perspective, the acquisition of competency and knowledge is contextualized, that is, it develops by acting in situation. The situations-based approach is grounded in different theoretical orientations, such as the communicative approach (in language teaching), the problem-based approach, constructivism, socioconstructivism, situated action, situated cognition, distributed cognition and enaction.

> Masciotra D., Roth W.-M. & Morel D. (2007) *Enaction: Toward a zen mind in learning and teaching*. Sense Publishers, Rotterdam.

>> This book is addressed to all those in the field of education or related fields who are interested in exploring the question, "What does it mean to know, to learn and to teach?" Contrary to popular conceptions, an enactive perspective assumes that knowing and learning are not disembodied operations that take place solely in a person's head. Rather, they are a function of the whole person who is firmly situated in the world and who acts in the world to transform it, just as she is transformed by it. The dynamic and transformational nature of knowing and learning are reflected in the relationship between the person and her world, a relationship that evolves through acting in and with the world rather than abstracting oneself from it. Knowing develops as a function of the person's availability, that is, her full involvement and presence in the here – and now. The aim of education is thus to foster

the development of this relationship in a never-ending quest for deep interiority with the world. Drawing on their experiences as teachers, curriculum developers, students, Zen practitioners, karateka, bicyclists, hobby mathematicians, and gardeners, the authors provide many concrete examples of what it means to think about knowing and learning in terms of enaction and how teachers and curriculum developers who take enactivism seriously might go about designing and implementing lessons.

## Management science

> Eddy B. (2010) *Graymanship: The management of organizational imperfection*. Multi-Dimensional Press, Lake Mary FL.

>> Constructivism is a wonderful philosophical breakthrough. It is also a perfect tool for praxis in the field of organizational management. Consider the organizational imperfections of miscommunications, incompetence, disorganization, disruption, disobedience, inequity, disloyalty, politics, unethical behavior, conflict, and cynicism. According to the Constructivist worldview... these do not exist. We construct them, and, if so, we can deconstruct them to creatively deal with them. Graymanship presents a constructivist answer to the question "Where do you draw the line" and applies that to the eleven imperfections above. [http://www.gistinc.org/mdp\\_graymanship.html](http://www.gistinc.org/mdp_graymanship.html)

## Psychotherapy

> Raskin J. D., Bridges S. K. & Neimeyer R. A. (eds.) (2010) *Studies in meaning 4: Constructivist perspectives on theory, practice, and social justice*. Pace University Press, New York.

>> This volume addresses cutting edge issues in constructivist psychology dealing with theory, practice, and social justice. The volume begins by delving into thorny issues of meaning and communication from both radical constructivist and social constructionist perspectives. Building on this, prominent practitioners share advances in research and practice related to constructivist therapy – including work exploring grief, love, and

narrative. From there, the volume pays special attention to constructivist conceptions of social justice as they relate to working with torture survivors, mentoring graduate students, and dealing with the objectification of women; it even uses constructivist theory to reflexively examine the limits of social justice counseling as a theoretical orientation. Finally, the volume comes full circle by revisiting theory – this time exploring the value preferences that often infuse research on epistemological beliefs, the metaphor of the psychotherapist-as-philosopher-of-science, and the contentious status of individualism within pragmatism and constructivism. In sum, *Studies in Meaning 4* highlights constructivism's multiplicity through fourteen stimulating and, at times, controversial scholarly contributions intended to sharpen the implications of constructivism for social critique and psychological practice. <http://constructivistpsych.org/SiM/4.htm>

> Dell'Aversano C. (2008) *Beyond dream and reality: Surrealism as re-construction*. *Journal of Constructivist Psychology* 21(4): 328–342.

>> Through an analysis of some key theoretical texts of historical Surrealism, this article elucidates the connection between the theory and practice of artistic Surrealism and the Kellyan concept of reconstruction. Its main thesis is that Surrealism originates in a reconstruction of the most superordinate construct in both Western aesthetics and Western ontology—the construct real-unreal—and that the ultimate aim of Surrealist poetics is to provoke a similar reconstruction in the audience.

> Dell'Aversano C. (2010) *Exploring aesthetic constructs: Likes, dislikes, and personal style*. *Journal of Constructivist Psychology* 23(2): 85–101.

>> This article offers a definition of some basic concepts of artistic theory in Personal Construct Psychology (PCP) terms and gives full directions, as well as an elucidation of the underlying theory, for a two-day workshop addressed to amateur and professional artists in which various PCP techniques are used to elicit constructs related to the exercise of creativity in the visual arts and the elicited constructs are applied to the exploration of new avenues of stylistic development.