

Publication Review

Recent books and articles related to constructivist approaches

> 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. **> How to contribute** • To have your constructivism-related publications listed in this section, send an email to 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. For more information, visit <http://www.constructivistfoundations.info/bib/>

Art

> McWilliams S. A. (2009) Taking pictures versus making art: A personal construal of creative photography. *Personal Construct Theory & Practice* 6, 21–33.

>> I characterize my approach to creative photography from a constructivist or postmodern perspective as “making art” as contrasted to “taking a picture of something.” I subsume this dimension under the superordinate dimension of constructivism and postmodernism contrasted with foundationalism and modernism, viewing creative photography as an appropriation of impressions and concepts to create an image that depends for its meaning on the viewer’s response rather than representing reality or inherent meaning. I also consider subordinate construct dimensions related to the creative process of making artistic photographs and include examples of images that illustrate these dimensions.

<http://www.pcp-net.org/journal/pctp09/mcwilliams09.pdf>

Cognitive Science

> Froese T. & Stewart J. (2010) Life after Ashby: Ultrastability and the autopoietic foundations of biological individuality. *Cybernetics & Human Knowing* 17(4): 7–50.

>> The concept of autopoiesis was conceived by Maturana and Varela as providing the necessary and sufficient conditions for distinguishing the living from the non-

living (and, by extension, the cognitive from the non-cognitive). More recently, however, there has been a growing consensus that their original conception of autopoiesis is necessary but insufficient for this task as it fails to meet a number of constructive, interactive, normative, and historical requirements. We argue that it also fails to satisfy crucial phenomenological requirements that are motivated by the ongoing appropriation of autopoiesis as a key concept in enactive cognitive science. The root of these problems can be traced to the abstract general systems framework in which the ideas were first formulated, as epitomized by Ashby’s cybernetics. While this abstract generality has helped the concept’s popularity in some circles, we insist that a restriction of autopoiesis to a radical embodiment in chemical self-production under far-from-equilibrium conditions is necessary if the concept is to live up to its original intentions.

<http://froese.wordpress.com/2010/12/27/paper-life-after-ashby/>

> Norton A. (2010) Being radical. For the Learning of Mathematics 30(3): 23–24.

>> This commentary responds to a criticism of constructivism by Wolff-Michael Roth, published in *For the Learning of Mathematics* 30(2). At times, Roth oversimplifies and mischaracterizes constructivist perspectives on learning while promoting embodied cognition as an alternative. I argue that a simple transposition of terms largely aligns his description of embodied mathematical objects with the constructivist conception of mathematical objects as interiorized action.

> Torrance S. & Froese T. (2011) An inter-enactive approach to agency: Participatory sense-making, dynamics, and sociality. *Humana Mentis* 15: 21–53.

>> An inter-enactive approach to agency holds that the behavior of agents in a social situation unfolds not only according to their individual abilities and goals, but also according to the conditions and constraints imposed by the autonomous dynamics of the interaction process itself. We illustrate this position with examples drawn from phenomenological observations and dynamical systems models. On the basis of these examples we discuss some of the implications of this inter-enactive approach to agency for our understanding of social phenomena in a broader sense, and how the inter-enactive account provided here has to be taken alongside a theory of larger-scale social processes.

<http://froese.wordpress.com/2011/01/25/paper-an-inter-enactive-approach-to-agency/>

Communication Science

> Bastos M. T. (2011) Niklas Luhmann: A social systems perspective on the Internet. *The Altitude Journal* 9(1): 1–14.

>> The paper presents a social system’s perspective on the Internet, based mostly upon a radical constructivist approach. It summarizes the contributions of German sociologist Niklas Luhmann and outlines the theoretical boundaries between the theory of social systems and that of media studies. The paper highlights the self-referential nature of the Internet, which is depicted

as both a system and an environment by means of a network of serialized selections and passing on of data. Therefore, whereas media theory pictures the Internet as a medium, this paper describes it as a system in regard to its self-referential dynamic, and as an environment in regard to the non-organized complexity of data within the medium. Even though the Internet is hereby depicted as an autopoietic system from a social system's perspective, the paper does not resort to all the concepts of Luhmann's theory.

http://www.thealtitudejournal.com/uploads/4/2/3/3/4233079/bastos_altitude_9_2011.pdf

Cultural Studies

> **Bergthaller H. & Schinko C. (eds.) (2011) Addressing modernity. Social systems theory and U.S cultures. Rodopi, Amsterdam.**

>> Gathering essays from a group of cultural and literary scholars, sociologists, and philosophers, *Addressing Modernity* reassesses the claims of American exceptionalism by setting them in the context of Luhmann's conception of modernity, and explores how social systems theory can generate new perspectives on what has often been described as the first thoroughly modern nation. As a study of American society and culture from a Luhmannian vantage point, the book is of interest to scholars from both American Studies and social systems theory in general.

Design

> **Herr C. M. & Fischer T. (2010) Digital drifting: Minimally instructive education for tool-aided creativity in Asia. *Cybernetics and Human Knowing* 17(1-2): 37-57.**

>> This paper introduces a teaching approach that applies the circular and conversational nature of design to itself. To this end we have developed workshops that, within the time frame of usually five days over three weekends, allow students to abandon and renegotiate preconceived terms of engagement and goals in design conversations and to develop appreciation for, and readi-

ness to adopt, unforeseen events with unexpected qualities. We show how avoiding goal-driven linear processes, and embracing circular causality, can provide a fertile environment for students to develop new ideas not only in applied designing but also in design management.

Education Science

> **Alhadeff-Jones M. (2010) Challenging the limits of critique in education through Morin's paradigm of complexity. *Studies in Philosophy and Education* 29(5): 477-490.**

>> This paper is inspired by Edgar Morin's paradigm of complexity and his constructivist and non-dualistic critique of scientific and philosophical forms of reductionism. It aims to challenge the fragmentation and the reduction framing the understanding of the notion of "critique" in educational sciences, and more broadly in the academia. Based on a review of the literature identified in French-speaking and English-speaking critical traditions in education, several factors determining the way the idea of critique is reduced are highlighted. Stressing the tacit character of those variables challenges the limits of traditional conceptions of critique in contemporary education. According to the constructivist, complex and non-dualistic position adopted, this paper illustrates the relevance of an epistemological framework integrating more systematically the conditions of emergence, the limitations, as well as the antagonistic, complementary and contradictory relationships, that connect educational theories of critique to one another. Based on this position, this paper finally suggests that a distinction be made between "hypocritique" and "hypercritique" as a semantic artifact, stressing the importance of challenging educational research and theories according to the level of complexity that one may attribute to them.

> **Hackenberg A. J. (2010) Mathematical caring relations: A challenging case. *Mathematics Education Research Journal* 22(3): 57-83.**

>> Developed from Noddings's (2002) care theory and von Glasersfeld's (1995) constructivism, a mathematical caring re-

lation (MCR) is a quality of interaction between a student and a teacher that conjoins affective and cognitive realms in the process of aiming for mathematical learning. In this paper I examine the challenge of establishing an MCR with one mathematically talented 11-year-old student, Deborah, during an 8-month constructivist teaching experiment. This publication is relevant for constructivist approaches because it develops a framework for student-teacher interaction based on constructivism.

> **Masciotra D. & Morel D. (2011) Apprendre par l'expérience active et située. *La méthode ASCAR. Presses de l'Université du Québec.***

>> Schools aim to prepare learners for life, but in practice what they teach is knowledge that is disconnected from learners' realities. Many contemporary education reforms attempt to bridge this gap between school and life by replacing the traditional transmission model of teaching with a more constructivist orientation to learning. In Quebec, pedagogical reform in adult education has resulted in new programs of study based explicitly on constructivist and situated approaches to learning, on the assumption that these two approaches are mutually reinforcing (knowledge is constructed by acting in situation). These programs aim to develop learners' autonomy in exercising the social roles (as members of a family, consumers, workers and citizens) expected of them in their real-life situations: planning a family budget, finding affordable housing, applying for a job, voting in an election, etc. Considerable time and effort has been devoted to the development of these programs at the level of the official curriculum, but up until now little has been done to support their implementation at the classroom level. In this regard, the authors of *Apprendre par l'expérience active et située* [Learning Through Active, Situated Experience] outline a method and a set of pedagogical tools intended to help practitioners (teachers, pedagogical consultants) design learning and evaluation scenarios that address the real-life needs of their learners. It is referred to as the ASCAR method, the acronym ASCAR standing for the essential components of situated, experiential learning: action, situation, constructed knowledge

(connaissance), attitudes and resources. The method is illustrated by two fully developed scenarios, one created for the Mathematics program and the other for the French Language program, both in adult general education. However, the method is sufficiently flexible and general to be applicable to any level of schooling (elementary, secondary, collegiate, literacy) and to both general and vocational education, including teacher training.

<http://vitrine.entrepotnumerique.com/p/5884?referrer=showcase>

> Meyer D. L. (2009) *The poverty of constructivism. Educational Philosophy and Theory* 41(3): 332–341.

>> Constructivism claims to be a post-epistemology that replaces “traditional” concepts of knowledge. Supporters of constructivism have argued that progress requires that pre-service teachers be weaned off traditional approaches and that they should adopt constructivist views of knowledge. Constructivism appears to be gaining ground rapidly and should no longer be viewed as an exercise in radical thinking primarily aimed at generating innovative teaching. It has become an integral part of the pedagogic mainstream. Close examination of the theoretical foundations of constructivism, however, reveals that the basic assumptions of constructivism are flawed. Far from being a postepistemology, constructivism simply regresses to a pre-Renaissance mindset with theology replaced with a psychologism. Constructivists should be aware that the implications of constructivism for future generations may be both profound and non-benign.

> Norton A. & Wilkins J. L. M. (2010) *Students’ partitive schemes. Journal of Mathematical Behavior* 29(4): 181–194.

>> This article reports on results from a study that quantitatively tested hypotheses arising from Les Steffe and John Olive’s Fractions Project. It affirms their work and scheme theory in general. For example, the study showed that additional mental operations are necessary for middle school students to generalize their partitive conceptions from unit fractions to other proper fractions.

Epistemology

> Staver J. R. (2010) *Skepticism, truth as coherence, and constructivist epistemology: Grounds for resolving the discord between science and religion? Cultural Studies of Science Education* 5(1): 19–39.

>> Science and religion exhibit multiple relationships as ways of knowing. Some of these ties create stress, and tension between science and religion represents a significant chapter in humans’ cultural heritage before and since the Enlightenment. Truth, knowledge, and their relation are central to science and religion as ways of knowing and as social institutions, and to their interaction. In religion, truth is revealed through God’s word. In science, truth is sought after via empirical methods. Discord can be viewed as a competition for social legitimization between two social institutions whose goals are explaining the world and how it works. Under this view, the root of the discord is truth as correspondence. In this concept of truth, knowledge corresponds to the facts of reality, and conflict is inevitable. The discord can be set on new ground and resolved by taking a moderately skeptical line of thought, one that employs truth as coherence and a moderate form of constructivist epistemology. Quantum mechanics, evolution, and research on human consciousness provide support for this line of argument. Within a constructivist perspective, scientists would relinquish only the pursuit of knowing reality as it is. Scientists would retain everything else. Believers who hold that religion explains reality would come to understand that God never revealed His truth of nature; rather, He revealed His truth in how we are to conduct our lives.

Knowledge Management

> Vines R., Hall W. P. & McCarthy G. (2010) *Textual representations and knowledge support-systems in research intensive networks. In: Cope B., Kalantzis M., Magee L. (eds.) Towards a semantic web: Connecting knowledge in academic research. Chandos Press: Oxford: 145–195.*

>> The paper explains how scientific and academic knowledge is dynamically constructed, refined and formalized through a series of cyclic activities in hierarchically organized socio-technical networks. Although not named as such, the approach in this chapter is based on a radical form of constructivism derived from Karl Popper’s evolutionary epistemology expounded in his 1972 “Objective Knowledge: An Evolutionary Approach” and later works, as combined with Col. John Boyd’s OODA loop ideas on the cyclical construction of strategic knowledge. Note that Popper’s “objective knowledge” refers to knowledge preserved in objective formats (e.g., printing), with no implications that such knowledge objectively represents the world.

[http://www.orgs-evolution-knowledge.net/Index/DocumentKMOrgTheoryPapers/VinesEtAl\(2010\)TextualRepresentationsKnowledgeSupport-SystemsInResearchIntensiveNetworks.pdf](http://www.orgs-evolution-knowledge.net/Index/DocumentKMOrgTheoryPapers/VinesEtAl(2010)TextualRepresentationsKnowledgeSupport-SystemsInResearchIntensiveNetworks.pdf)

Linguistics

> Benedetti G. (2009) *The meaning of the basic elements of language in terms of cognitive operations: Operational Semantics. Advanced Studies in Biology* 1(5–8): 255–305.

>> In this article, the author provides a brief introduction to a completely new theory in Semantics, Operational Semantics (OS), which concerns the meaning of the basic linguistic elements that are indispensable for any linguistic expression, i.e., the fundamental “grammatical” words and morphemes. Even if in the text there is no explicit reference to constructivism, OS could be relevant for constructivist approaches, since its fundamental presupposition is that the meanings of these linguistic elements are mainly sequences of elemental mental operations (amongst which those of attention play a key role) that are actively carried out by the subject.

<http://www.m-hikari.com/asb/asb2009/asb5-8-2009/benedettiASB5-8-2009.pdf>

> Kravchenko A. V. (2009) *The experiential basis of speech and writing as different cognitive domains. Pragmatics & Cognition* 17(3): 527–548.

>> Traditionally, writing is viewed as a code that stands in one-to-one correspondence to spoken language, which is therefore also viewed as a code. However, this is a delusion, which is shared by educators and has serious consequences for cognition, both on individual and on social levels. Natural linguistic signs characteristic for the activity of languaging and their symbolizations (graphic markings) are ontologically different phenomena; speech and writing belong to experiential domains of different dynamics. These dynamics impact differently the linguistic/behavioral strategies of individuals and communities, viewed as second- and third-order living systems operating in a consensual domain as structure-determined systems. Failure to acknowledge this contributes to the spread of functional illiteracy in modern societies, which may lead to cognitive/communicative dysfunction. Technology-enhanced new literacies challenge the value of traditional written culture, raising questions about the relationship between speech and writing and their roles in human evolution. This paper builds on and extends Maturana's biology of cognition and language.

> Kravchenko A. V. (2010) *Native speakers, mother tongues, and other objects of wonder*. *Language Sciences* 32(6): 677–785.

>> Building on and extending Maturana's biology of cognition and language – the idea that humans are structure determined living systems operating in a consensual domain of interactions, and that language is a special dimension of human cognition with an identifiable biological function – this paper questions the presumptions standing behind such firmly established notions in conventional mainstream linguistics as “native speakers,” “mother tongue,” “linguistic fact,” “monoglot community.” While linguists routinely appeal to native speakers as “informants” in defining “facts” about a particular language spoken by a particular community, these “facts” then being used in identifying individual languages as separate semiotic systems governed by specific sets of rules, there do not seem to be clearly delineated grounds on which native speakers' linguistic performance is viewed as “exemplary” for com-

munication in a given tongue, thus serving as a kind of “standard” to be achieved by those whose mother tongue is different and whose cultural identity, for that reason, is also different. It is argued that the empirical value of “linguistic competence,” allegedly characteristic of native speakers, is insubstantial, and the concept of “monoglossia” ought to be radically revised.

Philosophy

> Balsemão Pires E., Nonnenmacher B. & Büttner-von Stülpnagel S. (eds.) (2010) *Relations of the Self*. *Imprensa da Universidade de Coimbra, Coimbra*.

>> The publication deals with the concept of self-reference across its multidisciplinary applications. The authors and themes scrutinized go from Plato and the Stoics to G. Günther and N. Luhmann; from paradoxes in Metamathematics to Artificial Intelligence.

> Deprez S. (2010) *De l'arbre cartésien au bateau de Neurath. Plaidoyer pour des frontières mouvantes*. In: Blaquart J.-L. & Lecuit J. B. (eds.) *Repenser l'humain. La fin des évidences*. L'Harmattan, Paris: 139–157.

>> The realist and reductionist epistemology is problematic about ethics where the being determines what ought to be. In this paper, I refer to Otto Neurath and his version of constructivism, which considers knowledge as a project and a production, and not only as an object and a discovery. In this view, the boundaries between being and what ought to be are reshaped, to the benefit of the ethical debate and the participation of citizens in scientific discussions.

Psychotherapy

> McWilliams S. A. (2009) *William James' pragmatism and personal construct psychology*. *Personal Construct Theory & Practice* 6: 109–118.

>> Scholars locate Kelly's Personal Construct Psychology within the context of American pragmatism. Kelly noted his closeness to pragmatist John Dewey, but only cited William James briefly and in gen-

eral terms. James' explication of pragmatism demonstrates several areas of compatibility with PCP; examining James' ideas might deepen understanding of PCP. This article describes relevant elements of James' pragmatism, including the process of nature, the practical effects of ideas, truth as action and practice, passion and emotion, conventional common sense constructions, generalization of constructs, the role of human possibility, and the importance of goals and intentionality.

<http://www.pcp-net.org/journal/pctp09/mcwilliams091.pdf>

> McWilliams S. A. (2009) *Interdependence, essence, and conventional reality: Middle way Buddhist and constructivist perspectives*. In: Leitner L. M. & Thomas J. C. (eds.) *Personal constructivism: Theory and applications* Pace University Press, New York: 365–383.

>> Constructivist thought may benefit from Buddhist philosophy by viewing the cause of human dissatisfaction and suffering as the tendency to mistake conventional reality for ultimate reality. The Madhyamika philosophy of the interdependent, impermanent, and empty nature of phenomenal reality provides a middle way between hermeneutic and epistemological constructivism that supports the evolution of constructivist theory and practice.

> McWilliams S. A. (2010) *Inherent self, invented self, empty self: Constructivism, buddhism, and psychotherapy*. *Counseling and Values* 55: 79–100.

>> Constructivist and Buddhist approaches to counseling and psychotherapy share increasing popularity as well as similar epistemological assumptions and understanding of human dysfunction and its amelioration. We can see these approaches as consistent with postmodern psychology, distinguished from a realist or foundationalist view. This article provides an overview of these two models and describes some of their implications for psychopathology and psychotherapy, including examples of specific therapeutic approaches drawn from each perspective that might mutually inform practitioners who wish to apply this perspective to a higher view of the human situation.

Science Policy

> Mavrofidis T., Papageorgiou D. & Kameas A. (2010) Science as a second-order observer: Proposing a Reference Influence Factor. In: Conf. proceedings of the 14th world multiconference on systemics, cybernetics and informatics (WMSCI 2010), Vol III: 186–191.

>> This article focuses on certain aspects of the methods of evaluation of scientific publications and especially on the influence of those publications. We argue that positive or negative appraisal of the “impact factor” for scientific publications cannot be judged properly out of the systemic context of the contemporary scientific problematic and relevant practices. Thus we comment on these practices in the context of a second-order cybernetic scope, focusing on critical issues of observing science and presented scientific results, in comparison with the problems arising from concepts such as “truism” or “validation.”

<http://www.scribd.com/doc/45861974/Science-as-a-Second-Order-Observer>

Social Science

> Jokisch R. (2011) Why did Luhmann’s social systems theory find so little resonance in the united states of america? In: Bergthaller H. & Schinko C. (eds.) Addressing modernity. Social systems theory and U.S. cultures. Rodopi, Amsterdam: 201–228.

>> The fact that Luhmann’s position has barely been able to take root in the US so far and found only relatively little resonance among academics is closely connected to the significant cultural differences between the German-continental and the Anglo-American world. I see this as a cultural problem, one that is based on the attitude that the individual has to his state. What, then, does “culture” mean in this context? What are the major differences between the two cultures? With due brevity, I wish to elaborate here the key differences regarding mainly legal institutions within the two cultures. Of course, this can only be carried out in stylized form. I must thus ask the reader’s forbearance that I have to rely on the presentation of ideal types.

> Vanderstraeten R. (2010) Scientific communication: Sociology journals and publication practices. *Sociology* 44: 559–576.

>> The rise of scientific specializations and disciplines depends on the formation of specialized scientific communities. The establishment of specialized scholarly journals facilitates the formation of such communities. Publications, especially articles in specialized journals, have become institutionalized as the “ultimate” form of scientific communication. Specialized journals fulfill a key role in the scientific disciplines. This paper provides an analysis of these communication practices within the discipline of sociology, and sketches how these communication practices influence scientific research.

<http://www.asc-cybernetics.org/2011>

ASC Annual Conference
9-15 August 2011
in Richmond, Indiana, USA





Conference Theme: Listening
We live in a time that emphasizes the importance of giving people their voice. But, as Heinz von Foerster noted, the listener makes the meaning, not the speaker, so it is the act of listening that transforms a stream of sounds into that meaning. The act of listening begins to make human interaction circular and creative.

As a subject, Cybernetics informs circular or recursive systems, and listening provides a key to circularity in human systems, allowing us to respond in appropriate manners, possibly leading into new territory, generating new ideas and creating choice. This is cybernetic circularity in action.

We also use the word listening “metaphorically”, beyond its origin in hearing. But whichever metaphor we choose, listening requires opening up, having an open mind, and not judging until having listened properly and emphatically, not only to what is said, but also to what “what is said” does. Such heightened sensitivity, we argue, goes to the core of the idea of “caring” for and with each other.

In our conference, we will not only discuss and think about listening. We will also practise it. We intend not just to understand (and hence to position) “metaphorical” listening, but also to learn to do it better. Through listening, the idea of participation will come alive. We will enjoy each others’ company, experience what we each have to contribute and leave the conference with ideas that none of us had when we arrived.

The ASC endeavors, each year, to reach out to new communities as well as those it has already established links with. Last year we welcomed artists, designers and mathematicians. This year we hope to add those in listening practices and professions—musicians, therapists, managers, educators and others—as well as our artist, designer and mathematician friends, to enrich our meeting.

Join us in exploring listening in all its glory, 11 to 13 August 2011 in Richmond, Indiana. Join us, too, in the pre-conference (9 and 10 August) and post-conference (14 and 15 August) events.

Venue
The conference will be held at the Quality Inn Hotel and Conference Center in Richmond, Indiana. Accommodation will be available there, too.

Paper Refereeing and Proceedings
Although this is a conference that values conversation between participants above all, we have made arrangements for those who need or want to submit papers. This conference is expected to generate a set of proceedings published after the conference by one of several journals and publishers with which the ASC is well connected. The process of refereeing and publishing is a cumulative one that allows for continuous improvement of each paper, especially in reflecting discussions at the conference. Papers will be accepted in the first instance by blind refereeing of 400 word extended abstracts. There are 2 submission dates, giving a chance to rework abstracts. Authors of accepted abstracts will be asked to post drafts on the conference website for open refereeing by conference participants. All comments and responses will be visible to all conference attendees. This is the second level of refereeing. Paper presentation consists of listening to and including benefits from comments, encouragements and criticisms made at the conference, as well as incorporating new material found by authors as a result of their participation. After the conference, authors will be invited to rework their papers. Reworked papers will be subject to rigorous, traditional blind refereeing processes, after the conference. For the latest details and submission deadlines, please visit the conference website.