

Entries in *The Encyclopedia of Semiotics* (P. Bouissac, Ed.). Oxford/New York: Oxford University Press, 1998: Max Bense (pp. 72-74), Ernst Cassirer (pp. 108-110), Computer (pp. 136-138), Eugen Coseriu (pp. 148-150), Interface (pp. 319-321), Parallelism (pp. 465-467), Structure (pp. 601-603)

Max Bense

Founder of what became known as the “Stuttgart School,” probably more a thought direction than a coherent semiotic movement, Bense was an extremely controversial scholar and teacher. His entire work is shaped by his formative years of study in physics, expanded, not accidentally, in mathematics, chemistry, and geology. Under the supervision of Oskar Becker, he wrote a dissertation on quantum mechanics and relativity (1937, published in 1938). His post-doctoral work is on a spiritual history of mathematics (1946). For the reader aware of this background, Bense’s writings, in philosophy, aesthetics, semiotics, text theory, and even his atheistic literature, political articles, and his poetry, appear as a continuation of his scientific work. Indeed, his ambition was to establish a scientific foundation for those areas of the humanities in which he became interested. This ambition frequently led him to create “circles” and publications dedicated to his program.

Unfortunately, less known and less celebrated outside Germany (he was born in Strassburg and preserved a nostalgia for Alsace), Bense contributed powerful ideas to contemporary semiotics. But in order to realize their significance, one has to place them in the broader context of his heterogenous work. As an existential rationalist, he very early refuted speculative philosophy (cf. 1949). Under the influence of the then emerging information theory and cybernetics, he proceeded, as did Abraham A. Moles, with a very ambitious project for a new aesthetics. The emphasis is on the mathematical and technical foundation of what he defined as creative processes and the resulting artifacts. It is quite relevant that his work, entitled *Aesthetica* (1954), in some ways parallels that of the founder of the discipline, Alexander Baumgarten (1750). Semiotic considerations that Baumgarten only enunciated but never elaborated became a major theme of Bense’s work. Modelled after Shannon and Weaver’s syntactic model of communication and heavily indebted to information theory, Bense’s information aesthetic contains a numeric aesthetic and a semiotic aesthetic. Within numeric aesthetics, thoughts originating from Christian von Ehrenfels (on Gestalt degrees, 1916) and George D. Birkhoff (on aesthetic measure as a relation between order and complexity, 1933) lead to aesthetic quantifiers that describe aesthetic states. But the breakthrough is rather in the semiotic thought.

Bense correctly stated that there are no specific aesthetic signs, rather aesthetic functions fulfilled in given contexts of interpretation. Firmly anchored in the realm of reality, Bense was obsessed with how much of the object represented in an art work is present and identifiable as such in the work. This is where he introduced the notion of semiotic information, i.e., degree of presence of the object in the material embodiment of signs participating in a work of art. The inverse of semiotic information is semioticity, i.e., degree of independence of the object from its representation. Later on, semioticity was to define the conventional nature of aesthetic artifacts.

It is by no accident, though quite paradoxical, that Bense’s semiotic attempt unfolds within a

Peircean framework. The original Peircean terminology was adopted in view of its resonance to his own vocabulary. Moreover, Peirce's scientific background made him literally a model for Bense. What is remarkable is how the dynamic thought fundamental to Peirce's semiotics, and best embodied in the notion of semiosis, was actually converted into the structuralist posture to which Bense remained captive in the end. This is the paradox hinted to above. Peirce offered the scheme of typology; Bense filled the cells and looked further for a semiotic calculus. Finally, he discovered this calculus in the form of the semiotic matrix and matrix operation, especially the so-called inverse matrix translating sign typologies back into the realm of the object represented. This achievement needs more than acknowledgement. It is indeed exciting to conceive of a universal semiotics as powerful and effective as, say, calculus or information theory.

As was pointed out in articles and lectures dealing with Bense's contribution to contemporary aesthetics, the effort goes counter to the implicit assumption of Peirce's semiotics, which is that of infinite sign processes. This explains why Bense's aesthetic semiotics kept changing its terminology. For a while, the aesthetic condition was represented by an iconic supersign displaying aestheticity. Later, art seemed to have an iconic appearance, an indexical reality, but a symbolic existence. And again, further down the road of his brilliant, but somehow undisciplined research, art was represented by a very well defined Peircean sign, i.e., *rhematic-indexical-legisign*. The justification for the formula is at hand: Art is open-ended (the *rhematic* character); it is intentional and singular (the indexical aspect); and it is conventional (*legisign*). What seems to escape this obsession with typologies is the elementary concern with the interpretant dimension of each sign.

A direction that deserves more attention than provided until now is that of generative procedures. Bense is the author of the innovative idea of generative aesthetics, and in this capacity he wrote quite impressively about what it takes to program a machine for generating artifacts endowed with aesthetic characteristics. Under his direction, research was carried out that was much ahead of research done in other countries; exhibits, where semiotic aspects were ardently discussed, embodied these investigations.

Bense contributed quite a bit more to the interest in and exercise of semiotics in Germany, and in the countries where his students became active (Brazil is one of these). His contributions to text semiotics, which in his view is the analytical classification of texts from an aesthetic and semantic viewpoint, to semiotic models applied to design, education, photography, and visual communication formed the subject of many of his publications. He can be credited for initiating the field of visual semiotics; and within this concern, he stimulated attempts towards applied semiotics in product design, architecture, visual communication. But probably the most lasting legacy of Bense's semiotic work remains embodied in the course of study he initiated at the University of Stuttgart, and in the exceptional work of his many colleagues and students.

Bense was a catalyst, never tiring of experimenting, never tiring of questioning, never tiring of trying something new. Quite intolerant of any ideas besides his own, he embodied the notion of semiosis more than he was able to do justice to it in his works. Among those whose work in semiotics he influenced decisively are Elisabeth Walther, Hans Brög (in the field of art education), Manfred Schmalriede (the Gestalt aspect), Siegfried Maser (design), Frieder Nake (generative procedures), Borek Sipek (architecture), Georg Kiefer (environment), T.A. Schulz

(Peircean semiotics), etc. He published the magazine *Semiosis*, and organized semiotic seminars in Provence. In interacting with the semiotic group of Perpignan, Bense found at times ample confirmation of his own questions.

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