In *Posthuman Metamorphosis. Narrative and Systems*, Bruce Clarke uses second-order systems theory and neocybernetic theory to read narratives of metamorphosis as allegories of systemic operations. Analysing texts from Ovid to Octavia Butler, Clarke argues for the viability of the posthuman, as a multiplicitious and hybrid merger of different systems, to adapt humanity to its changing environment and to overcome the destruction of its own making.

*Posthuman Metamorphosis* is in part a continuation of Clarke’s earlier book, *Allegories of Writing: The Subject of Metamorphosis*, which read fictions of bodily transformation as allegories of narrative transformations inspired by new writing technologies. Clarke brings this earlier investigation up to date by focusing on the now fashionable concept of the posthuman. Yet in his use of this term, he distances himself from the pop culture images of the cyborg and other cybernetic mixtures of the organic and the mechanical and focuses instead on what he considers more "subtle" representations of symbiotic system mergers.

One of the most striking aspects of Clarke's book is that it is not just about literary metamorphosis, but also enacts metamorphic transformations by merging different theoretical systems. As the subtitle of the book indicates, Clarke's overall theoretical ambition is to combine the study of 'narrative' with the study of 'systems' so as to arrive at a superior theoretical model for the study of literary texts. Each of the first four chapters of *Posthuman Metamorphosis* highlights different aspects of this systematic merger.

In the first chapter, Clarke traces the convergences between narratology - he focuses especially on Bal's reworking of Genette's narrative system - and the systems and communication theory of Luhmann. He then uses this theoretical hybrid to analyse the uses of focalisation in a somme narratives of extraterrestrial encounters: H.G. Wells's *The War of the Worlds*, Arthur C. Clarke's *Childhood's End* and Carl Sagan's *Contact*. Clarke's second chapter is predominantly concerned with translating Bruno Latour's social theory into literary criticism. He uses Latour's hybrid concept of the quasi-object and his analysis of modernism to question the modernist and humanist essentialism of H.G. Wells's *The Island of Dr. Moreau*.

In Chapter Three, "System and Form", Clarke translates narratological concepts concerning narration and narrative levels into elements of systems logic by means of George Spencer-Brown's *Laws of Form*. Using examples from Shakespeare's *Midsummer Night's Dream* and Damon Knight's *Beyond the Barrier*, more particularly, Clarke traces narrative enactments of Spencer-Brown's (and Luhmann's) concept of two-sided form. Forms of narrative embedding are the focus of Chapter...
Four and Clarke analyses these as forms of systemic self-reference. As in the previous chapters, the theories evoked range from the literary and philosophical enquiries of Todorov and Derrida to the cybernetic theories of Gregory Bateson and Heinz von Foerster. The literary test-case of this chapter is Stanislaw Lem's *The Cyberiad: Fables for the Cybernetic Age*. Clarke identifies in this short story collection from 1967 several references to the first cybernetics, yet he also detects hints and insights of a "second-order cybernetic order avant la lettre".

When reading through the clever and spectacular - though sometimes baffling - theoretical transformations which Clarke effectuates in the first four chapters of his study, I could not help wondering at times about the point of these theoretical hybrids. Although the similarities and convergences between the fields of narrative theory and systems theory may indeed be striking, the actual gain of a potential merger for either of these fields seems questionable. From the perspective of literary criticism at least, several of the readings which Clarke offers could just as well have been made without the complex vocabulary of neocybernetics and systems theory. Only in the case of Lem's *The Cyberiad* is Clarke's framework of (neo-)cybernetics really indispensable, though not so much in terms of narrative form as in terms of the ideological content of the collection.

A similar closer fit between theory and literary text can be observed in the final two chapters of *Posthuman Transformations*. In Chapter Five, Clarke gives a particularly astute reading of the different textual and filmic transformations of *The Fly* against the background of theories of transmission, transformation and communication in first- and second-order cybernetics which also form the actual framework of the different versions themselves. In Chapter Six, finally, we are treated to an equally learned and perceptive analysis of Octavia Butler's Xenogenesis trilogy. Clarke shows how Butler's novels offer a literary transformations of insights from contemporary bioscience, in particular of Lynn Margulis and Dorion Sagan's *Microcosmos*. With the books' systemic merger of biology and literature and the posthuman characters' hybrid mergers of different species, it is not difficult to see that Butler's trilogy fully squares with the ideology, theoretical ambition and future hopes of Clarke himself. Thus, the end of the trilogy - a climactic evocation of the posthuman sublime - leads Clarke to formulate his near-utopian belief that the hybrid merger of systems is the way forward, both for theory and for the human race, which will "earn its continuation only by metamorphic integration into new evolutionary synthesizes".

Since I am hardly qualified to comment on the truth of this from a bio-genetic perspective, I will limit myself to the theoretical side of Clarke's arguments. In spite of the impressive range of theories which Clarke unpacks in *Posthuman Metamorphosis* and in spite of the often striking similarities which he traces between narrative theory and systems theory, I do not find that his theoretical translations they add a lot of new insights to narrative theory as such. The sheer exuberance of concepts which he marshalls in his study also - perhaps inevitably - leaves certain concepts over-simplified or under-explained. The term "allegory" for instance, which is one of the most frequently used in this book, remains annoyingly vague and also the "paradoxes" which Clarke likes to hunt for remain largely undefined. In spite of these methodological reservations observations, however, it is fair to say that Clarke offers many interesting and challenging perspectives on the representation and evolution of...
the posthuman and I would therefore not hesitate to recommend his book to those who are interested in the many crossovers that exist between contemporary literature, science and culture.

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