

Karl Eibl

How can evolutionary biology enrich the study of literature?

Evolutionary theory is simple and plausible. That's its fatal flaw. Without too much thought, you can dispute whole books with the kind of insights generated over a beer in the local pub. And you are rewarded with the satisfying sense of having had a glimpse behind the thin veneer of civilization. Opponents of evolutionary theory can avoid straining their grey matter as well. Depending on the context, they can content themselves with associating it with distasteful things and mentioning three catchwords – social Darwinism, reductionism and 'just so stories'. This allows them to bury the serious variants along with the vulgar ones. Yet in fact the historical sciences have always thought in evolutionary terms. They do so whenever they explain a phenomenon by seeking to ascertain its function within a given context and determine the conditions which make it possible.¹ In what follows, however, I am concerned not with the application of a 'general' evolutionary theory, but with how the findings of *biological* evolutionary theory might contribute to the scientific investigation of literature and literary behaviour.²

Discovering the naked ape

"The first poet to rhyme 'Herz' with 'Schmerz' was a genius, the thousandth a cretin."³ In this spirit, I would first like to cite the earliest consistently and explicitly sociobiological examination of a literary work of which I am aware.⁴ It dates from 1990. To mark the sixty-fifth birthday of the great Göttingen Germanist Albrecht Schöne, the great Göttingen primatologist Christian Vogel delivered a lecture entitled "'She's not the first'. A sociobiological version of the tragedy of Gretchen." He wove his lecture around seven questions. Why does Faust choose Gretchen? Why does Gretchen choose

¹ Biological analogies, currently found in such forms as so-called 'meme theory', represent a special problem, as does the problem of 'cultural evolution' as the evolution of culture. This is not my concern in the present article. But see Eibl, Karl: *Kultur als Zwischenwelt. Eine evolutionsbiologische Perspektive*. Frankfurt/M.: Suhrkamp 2009, esp. chapter 6: "Gibt es kulturelle Evolution?"; Eibl, Karl: "Sprache macht Kultur". In: *Evolution und das heutige Bild vom Menschen*. Jochen Oehler (ed.). Heidelberg: Springer 2010 (forthcoming)

² I use the term 'scientific' in a programmatic sense here. For a look at fundamental aspects of the relationship between the human sciences and humanities, see my dispute with Frank Kelleter. Eibl, Karl: "On the Redskins of Scientism and the Aesthetes in the Circled Wagons". In: *Journal of Literary Theory* 1 (2007), H. 2, p. 421–441. German: <http://www.karleibl.de/Wagenburg.pdf> (last visited 23. März 2010).

³ "Der erste, der – vor Jahrhunderten! - auf Sonne Wonne reimte, auf Herz Schmerz und auf Brust Lust, war ein Genie; der tausendste, vorausgesetzt, dass ihn diese Folge nicht bereits genierte, ein Kretin." Holz, Arno: "Selbstanzeige des 'Phantasmus'". In: Holz: *Werke*. Wilhelm Emrich/Anita Holz (eds.), vol. 5. Berlin: Luchterhand 1962, p. 69.

⁴ Vogel, Christian: "'Sie ist die erste nicht!' Eine soziobiologische Version der Gretchen-Tragödie". In: Manfred Eigen, Christian Vogel, Lothar Perliitt: *Grenzübertritte. Drei Vorträge zur deutschen Literatur*. Göttingen: Vandenhoeck 1991, p. 22.-35, esp.: p. 33. My thanks to Eckart Voland for pointing this out to me.

Faust? Why does Faust not marry Gretchen? Why does Gretchen hope to maintain contact with Faust? Why does he end up in a duel with Valentin? Why does Gretchen kill her child? Why is Gretchen sentenced to death? Vogel answers each of these questions in terms of reproductive strategy. Let's take the sixth question as an example:

Why does Gretchen kill her child?

Explanation in terms of reproductive strategy: With an illegitimate child she has poor marriage prospects, in other words she has squandered her 'residual reproductive value'. Without the protection and investment provided by a male, her illegitimate child has reduced chances of survival in any case, and the 'poor thing' will have scant prospects of reproduction later on. So the early killing of this unfortunate child serves to avoid bad investment and might help improve the mother's reproductive value. Many mammalian mothers commit infanticide in comparable circumstances.

Mice and certain other rodents even exhibit the pregnancy block effect (Bruce effect), a kind of automatic abortion. If a new alpha male takes over within three days of conception, pregnant females within the harem detect the new pasha's unfamiliar pheromones. This automatically triggers a miscarriage, readying them for more promising reproduction. Yet these very parallels alert us to certain differences. In the mouse's case, the hormones decide things, as it were, among themselves. But the case of Gretchen involves something we refer to as 'consciousness' or 'conscience', something that operates with categories such as honour, shame, sin, guilt, etc. And she is punished not by Faust, despite having ruined his feat of reproduction, but by the anonymous legal system. In the second part of the drama the object of Faust's desire is no less a figure than Helen, the ancient world's most beautiful woman. His efforts in this regard, highly commendable from a reproductive point of view, are in fact crowned with success when Helen bears Faust a son. Yet Euphorion, the gene bearer, suffers an early death, and Helen too disappears, merely leaving behind her robe. An immensely rich and powerful one-hundred-year-old Faust ultimately ends up alone and without heirs.

In keeping with the occasion, Vogel's remarks amounted to a scholarly joke against a serious background. Such a perspective can direct our attention to facts that have so far been generally ignored, without immediately coming to any firm conclusions about their relevance. A growing number (though not yet thousands) of sociobiological interpretations of literary works have now appeared,⁵ a character strip-tease at the end of which it is always the same naked ape who stands on the stage before us. A brief

⁵ Some interpretations of this kind can be found in the following anthologies: *Biopoetics. Evolutionary Explorations in the Arts*. Brett Cooke/Frederick Turner (eds.). Lexington: ICUS 1999; *The Literary Animal*. Jonathan Gottschall/David Sloan Wilson (eds.). Evanston Ill.: Northwestern UP 2005. An 'opus magnum': Gottschall, Jonathan: *The Rape of Troy: Evolution, Violence and the World of Homer*. Cambridge: UP 2008. Almost a satirical parody: Barash, David P./Nannelle R. Barash.: *Madame Bovary's Ovaries: A Darwinian Look at Literature*. New York: Delacorte 2005.

diversion, which served to break the monotony a little, came when the focus shifted to the audience. But once again, the aim was merely to reveal the purely Pleistocene motivation for behaviour. So the erotic preferences of first-year American female students were tested with the help of literary dummies, with the satisfying result that the young women were shown to have the ‘correct’ preferences, in other words those that promote reproduction (in a Stone Age context).⁶ It has also been established that readers of 19th-century novels have a preference for non- or even anti-authoritarian heroes; this is said to be a legacy of the Stone Age.⁷ Of course, the preference for strong, dominant heroes represents almost the same kind of legacy. But it would surely be worth examining under what *conditions* this or that legacy holds sway. Then, however, we would have to make a few other distinctions. Are we referring to reality, to texts or to recipients? Those of the 19th century or the present? Some of the exponents of a biologically-inclined approach to literature (or of a biology with literary inclinations) pay dearly here for failing to move beyond pre-1990 sociobiology of human behaviour and resisting certain later developments in evolutionary psychology. From the point of view of a more recent evolutionary psychology it seems advisable to consider

the importance of numerous complex psychological mechanisms sensitive to specific features of the environment; the importance of historical, developmental, and situational contexts; and the importance of differences and similarities across genders, across cultures, and across individuals.⁸

⁶ Kruger, Daniel J./Maryanne Fisher/Ian Jobling (2005): “Proper Hero Dads and Dark Hero Cads. Alternate Mating Strategies Exemplified in British Romantic Literature”. In: Gottschall/Wilson, *Literary Animal*. p. 225-243.

⁷ Johnson, John A., Joseph Carroll, Jonathan Gottschall, Daniel Kruger: “Hierarchy in the Library: Egalitarian Dynamics in Victorian Novels”. In: *Evolutionary Psychology* 6.4, 2008, p. 716-738.

⁸ DeKay, W. T./Buss, D. M.: “Human nature, individual differences, and the importance of context: Perspectives from evolutionary psychology”. In: *Current Directions in Psychological Science*, 1, 1992, p. 184-189, quote p. 189. Buss, David M.: “Evolutionary Psychology: A New Paradigm for Psychological Science”. In: *Psychological Inquiry* Vol. 6, No. 1, 1995, p. 1-30. German translation: „Evolutionspsychologie – ein neues Paradigma für die psychologische Wissenschaft?“. In: *Gene, Meme und Gehirne. Eine Debatte*. Ed by A. Becker et al. Frankfurt/M.: Suhrkamp 2003, p. 137-226. – On the theoretical framework see esp. the programmatic contributions by Tooby, John/Leda Cosmides: “The Past Explains the Present: Emotional Adaptations and the Structure of Ancestral Environments”. In: *Ethology and Sociobiology*, 11, 1990, p. 375-424, and Symons, Donald: “On the Use and Misuse of Darwinism in the Study of Human Behavior”. In: *The Adapted Mind*. Jerome H. Barkow/Leda Cosmides/John Tooby (eds.). New York, Oxford: Oxford UP 1992, p. 137-162. See also recent studies of cognitive evolutionary psychology, such as Cosmides, Leda/John Tooby: “Consider the Source: The Evolution of Adaptations for Decoupling and Metarepresentation”. In: *Metarepresentations: A Multidisciplinary Perspective*. Dan Sperber (ed.) (pp. 53-115). New York: Oxford UP 2000, p. 53-115; Tooby, John/Leda Cosmides/H. Clark Barrett: “Resolving the Debate on Innate Ideas: Learnability Constraints and the Evolved Interpenetration of Motivational and Conceptual Functions”. In: *The Innate Mind: Structure and Content*. Peter Carruthers/Stephen Laurence/Stephen Stich (eds.). New York: Oxford UP. 2005, p. 305-337. Tooby, John/Leda Cosmides: „Evolutionary psychology: Conceptual foundations“. In: David M. Buss (ed.): *The Handbook of Evolutionary Psychology*.

Adaptation or spandrel?

As we would expect from approaches anchored in evolutionary biology, attempts at a biological aesthetics are concerned with the benefits of art and/or literature, with their reproductive value and, since you can only reproduce if you survive long enough to do so, with their survival value.⁹ While there is no fundamental reason to condemn this approach, it has two weaknesses. We must begin by shedding light on these if we are to avoid rushing into an impasse. The first weakness is a highly generalized concept of art. The second is the risk of a very limited notion of utility.

Let's turn first to the concept of art. The term 'art' is one under which we bring together all kinds of peculiar phenomena – body art, epics, songs, dances, rock paintings, stories, games, buildings, sculptures, rubbish in the wrong place, etc – that correspond to *our* (very imprecise) everyday notion of art. Much the same applies, as it happens, to religion, culture, freedom, love, marriage, family, property, and many other elevated terms of everyday usage.¹⁰ Such 'cluster concepts'¹¹ serve as trawl nets and are quite useful for quick and fuzzy information, but not for deeper research. 'Art' (singular) is a late invention. In the 18th century, people still generally referred to 'arts' in the plural, by which they meant the broadest range of physical and intellectual skills. Only with philosophical aesthetics (and the cultural discourse of the educated classes) did the search for the essential 'nature' of art begin. If we use such terms as if they referred to universals, we fall victim to our own lexical naivety. The problematic consequences are evident, among other things, in the fact that some biologically inspired reflections treat

Hoboken: Wiley 2005, S. 5-67; <http://www.cbd.ucla.edu/downloads/concept-j16.pdf> (last visited March 23, 2010).

⁹ Alongside all kinds of popular works dealing with 'beauty' (but which mostly deal solely with attractiveness), the following are well worth a look: *Beauty and the Brain. Biological Aspects of Aesthetics*. Ingo Rentschler/Barbara Herzberger/David Epstein (eds.). Basel/Boston/Berlin: Birkhäuser 1988; *Evolutionary Aesthetics*. Ed. by Eckart Voland /Karl Grammer. Berlin, Heidelberg, etc: Springer 2003; Menninghaus, Winfried: *Das Versprechen der Schönheit*. Frankfurt/M.: Suhrkamp 2003. Recent attempts (ignoring these books) Boyd, Brian: *On the Origin of Stories. Evolution, Cognition and Fiction*. Cambridge/MA, London: Harvard UP 2009, and Dutton, Denis: *The Art Instinct. Beauty, Pleasure, and Human Evolution*. New York, Berlin, London: Bloomsbury 2009.

¹⁰ On the special problems of ethnological 'universals' see Christoph Antweiler: *Was ist den Menschen gemeinsam? Über Kultur und Kulturen*. Darmstadt: Wissenschaftliche Buchgesellschaft 2007.

¹¹ Gaut, Berys: "'Art' as a Cluster Concept". In: *Theories of Art Today*. Noël Carroll (ed.), Madison Wis., University of Wisconsin Press 2000, p. 25-44. Gaut reformulates the notions of Wittgenstein and Searle. The "main features" of "cluster accounts [...] are multiple criteria for the application of such concepts, though none of them are necessary. There is also a great deal of indeterminacy in how many of these criteria must apply if an object is to fall under the concept, though at the extremes there are clear cases where it does and clear cases where it does not." (Gaut, p. 26). Dennis Dutton, *Art Instinct*, collects 12 "cluster criteria" (Gaut has 10) and offers this 'cluster concept' of art as "a neutral basis for theoretical speculation" (p. 51). "While the cluster-criteria approach to understanding art does not specify in advance how many of the criteria need to present to justify calling an object art, the list nevertheless presents in its totality a definition of art" (p.61). But it is not a "definition of art" as an object of investigation, but a collection of real everyday uses of the word 'art', feasible for the first steps.

‘art’ (or literature) as a biological adaptation and declare all manner of useful effects of ‘art’ evidence of this.¹²

One common argument states that art attracts attention. This is indeed often the case, but applied to literature it would mean that anyone who talks particularly loudly or gesticulates wildly while speaking is producing some sort of art. Another typical argument (also applied, as it happens, to religion) is that it enhanced group cohesion and thus made the art-producing populations superior to those without art.¹³ This does seem fairly plausible *prima facie*, but is very difficult to prove; it is probably wrong when applied to certain historical conjunctures. At any rate it is very unspecific. It is true of everything that people (or animals) do together or for one another. In his novel *The Flounder*, Günter Grass suggested that group defecation (“Hordenschiss”) helped promote a sense of community among our ancestors. Literature especially is seen as a kind of pommel-horse for socially useful theory-of-mind exercises. And this may be true in specific instances.¹⁴ But for us to view these literary exercises as a relevant factor in natural selection, their effects would have to be generally demonstrable. They are not.¹⁵

¹² Because of this and a tendency towards panadaptationism in his work, I am unable to agree entirely with Brian Boyd’s *On the Origin of Stories*. But some of his ideas, especially the key term “cognitive play”, are well worth considering. See also my own numerous remarks on cognitive play and pleasure, e.g. Eibl, Karl: “Strukturierte Nichtwelten. Zur Biologie der Poesie”. In: *Internationales Archiv für Sozialgeschichte der deutschen Literatur* 18, 1993, H. 2, S. 1-36, *Die Entstehung der Poesie*. Frankfurt/M.: Insel 1994, and *Animal poeta. Bausteine der biologischen Kultur- und Literaturtheorie*. Paderborn: Mentis 2004, esp. p. 338ff., “Erzählspiele” and “Kognitionslust”). Recent: Eibl, Karl: „Vom Ursprung der Kultur im Spiel. Ein evolutionsbiologischer Zugang“. In: Anz, Thomas/Heinrich Kaulen (Ed.): *Literatur als Spiel. Evolutionsbiologische, ästhetische und pädagogische Aspekte. Beiträge zum Deutschen Germanistentag 2007*. Berlin, New York: de Gruyter 2009. p. 19-33.

¹³ Several scholars, namely David Sloan Wilson, recently have reanimated the idea of ‘group selection’. However, we should bear in mind that biological selection must always pass through the eye of a needle, namely individual gene transmission and thus individual reproductive competition. So group selection functions only if the trait in question offers benefits both with respect to competition between groups as well as competition between individuals within a group. Every claim of ‘multilevel selection’ must therefore show a mechanism or an adaption (or set of adaptations) to combine individual and group interests. On the literary treatment of a particular ingenious mechanism, ‘altruistic punishment’, see Flesch, William: *Comeuppance. Costly Signaling, Altruistic Punishment, and Other Biological Components of Fiction*. Cambridge MA: Harvard UP 2007. (An empirical study: Fehr, Ernst/Simon Gächter: “Altruistic punishment in humans”. In: *Nature* 415, 10. Jan. 2002, p. 137-140.)

¹⁴ Zunshine, Lisa: *Why we Read Fiction. Theory of Mind and the Novel*. Columbus: Ohio state UP 2006.

¹⁵ We should at least take a sceptical view of the common notion that art or literature makes people especially sensitive. Tsiknaki, Eirini: *Literatur und Persönlichkeitsentwicklung. Eine empirische Untersuchung zur Erfassung des Zusammenhangs zwischen literarischem Lesen und Emotionaler Intelligenz*. Munich: Meidenbauer 2005, looked for a correlation between the reading of literature and emotional intelligence and came to the conclusion that there is no such correlation. This negative conclusion was accompanied by a positive one: natural scientists enjoy a higher degree of emotional intelligence (of statistical significance) than their colleagues in the arts and humanities!

Quite another case is crediting literature with an especially prodigious capacity for storing and transporting information. Shared information is a cement of human cultures.¹⁶ But would it not be enough to refer to language (and to narrative as a ‘parole’-phenomenon) here? There must be some reason why some (which?) information is processed in such a roundabout way, and featuring made-up stories that we would call lies in everyday life. It is this reason that a literary investigation would want to get at.¹⁷

Control of attention, enhanced group cohesion, the cultivation of communicative skills, (creativity, edification, sublimation of the libido, etc.) – they all are occasional adaptive effects; but they do not work as selection pressures producing a biological adaptation ‘literature’ or ‘art’. It is crucial for any historical investigation to distinguish between biologically evolved adaptations and biologically fortuitous (but historically determined!) effects.¹⁸ ‘Art’ is a component of human cultures and is a result of evolution for the simple reason that the human capacity for culture and the variability of the phenotypes of human culture are the outcomes of evolution.¹⁹ But rather than a head-on preoccupation with a biological entity called ‘art’, it seems to me more appropriate and more analytically fruitful to look for universal biological *dispositions*, which, under varying cultural conditions, *facilitate* varying forms of what we call ‘art’ (and perhaps much else besides). A prerequisite for music is that pitch and rhythm can be identified and endowed with a specific sentiment, from the alarm signal to the Queen of the Night aria, and also that the noise caused by the making of physical objects is classified in a particular way. The biological origin of this probably lies in the calibration of hearing and the synchronization of physical activities. Painting and sculpture probably depends on processes of calibration in the machinery of visual perception. The principle of iconic imitation requires the capacity for depiction, a human privilege,²⁰ similar to symbolic language, evolved as a device for mapping the world.

Much the same applies to literature of course. It is a cultural composition and application of biological dispositions. The detailed symbolic description of the world,

¹⁶ On the importance of shared attention and shared information and the role of language constructing the ‘common ground’ of cultures see Tomasello, Michael: *Origins of Human Communications*, Cambridge Mass.: MIT Press 2008. German Translation: *Die Ursprünge der menschlichen Kommunikation*. Frankfurt/M.: Suhrkamp 2009.

¹⁷ See Scalise Sugiyama, Michelle: "Reverse-Engineering Narrative: Evidence of Special Design". In: Gottschall/Wilson, *Literary Animal*, p. 177-196, and: "Information is the Stuff of Narrative". In: *Style* 42.2 & 3, 2008, p. 254-260. For an anthropological framework see Pinker, Steven: "Language as an Adaptation to the Cognitive Niche". In: *Language Evolution. States of the Art*. Morten H. Christiansen and Simon Kirby (eds.). New York: Oxford UP2003, p. 16-37.

¹⁸ On this distinction of adaptation and fortuitous effect see the seminal work Williams, George C.: *Adaptation and Natural Selection. A Critique of Some Current Evolutionary Thought*. Princeton: Princeton UP³1970.

¹⁹ Cf. Eibl, Zwischenwelt.

²⁰ Hauser, Marc D.: *Wild Minds. What Animals Really Think*. New York: Holt 2003, p. 58.

including non-present parts of the world, and the detailed envisaging of possible worlds are peculiarities of the species *homo sapiens* and building materials of human cultures.²¹ So we can also include narration among the biological prerequisites for literature – factual narration as verbal representation of non-random sequences of events.²² The capacity to be responsive to psychological processes in others is also indispensable, those abilities, in other words, referred to as empathy and the theory of mind.²³ The language structures to which this capacity gives rise may be linked with other dispositions and may look quite different and have different adaptive effects depending on the historical context (‘literature’ too, of course, is one of those everyday ‘cluster’-terms that can mean all kinds of things). But there is one disposition that I would like to single out right now, one which is presumably indispensable to a great deal of what we call art. I am referring to the capacity for play, for decoupling capacities from their original contexts of genesis, and the way such actions are rewarded not by immediate success but by something that goes by the name of ‘pleasure’ (Aristotle: ἡδονή, Horace: *delectatio*) in poetic theory. Of which more later.

The second point, the aspect of utility, seems essential to any evolutionary explanation, even if it is not ‘art’ that we wish to explain but rather the dispositions that make art possible in the sense outlined above. This stands in stark contrast to the category of play which we have just addressed as well as to other central categories of philosophical aesthetics or poetics. An attempt has been made to mitigate the imperative of utility by positing a theory of by-products. I cite it here in the shape of the spandrel ‘theory’ put forward by Stephen J. Gould and Richard Lewontin as this version has become fairly widely known among biologically-inclined humanities scholars (biologists tend to regard it as the literary interpretation of a triviality).²⁴ In San Marco in Venice, Gould had a flash of inspiration. The spandrels formed by two arches in the shape of an upside-down triangle serve no structural purpose, but can be used as a surface for elaborate mosaics. And Gould believes that the same thing applies to evolution. Adaptations are accompanied by by-products that in themselves have no adaptive utility. This is the idea that Gould puts forward to counter ‘panadaptationism’ or ‘ultra-Darwinism’. Though this is largely a straw man, the fact to which Gould is drawing our attention here is of much importance. The *origin* (and ultimate causation) of

²¹ See Eibl, *Zwischenwelt*; on the objectifying function of human language in particular, see Eibl, *Animal poeta*, p. 232-276.

²² See Eibl, *Animal poeta*, p. 255f.

²³ See Mellmann, Katja: “Objects of ‘empathy’. Characters (and other such things) as psycho-poetic effects”. In: *Characters in Fictional Worlds*. Jens Eder/Fotis Jannidis/Ralf Schneider (eds.): Berlin, New York: de Gruyter (forthcoming).

²⁴ The classical publication: Gould, Stephen J./Richard C. Lewontin: “The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme”. In: *Proceedings of the Royal Society of London B* 205, 1979, p. 581-598. For a retrospective, see Gould, Stephen Jay: “The Exaptive Excellence of Spandrels as a Term and Prototype”. In: *Proceedings of the National Academy of Sciences USA*, vol. 94, 1997, p. 10750-10755. Elsewhere I have discussed this topic in light of Steven Pinker’s similar by-product thesis. See for example Eibl, *Animal poeta*, p. 310.

characteristics must be distinguished from their contemporary – or indeed any subsequent – *application*. In colloquial terms, many qualities started out small, that is, as by-products. But they could endure only if they were linked necessarily and indivisibly with a base product (to take a popular example: the fact that bones are white is due to calcium, but has no adaptive value in itself) and/or if they themselves took on new long-term-functions and thus evolved into adaptations in their own right.²⁵ (There are also largely adiaphoristic characteristics that are described as evolutionary noise, such as the shape of the nose, eye colour, and so on.) The spandrel or by-product hypothesis does not really mitigate the thesis of utility, but by distinguishing between evolutionary context of origin and new context of application, it is capable of coping with a far greater degree of complexity – as evolutionary psychology has been doing for some time now. Steven Pinker has brought this out with a nice, simple example. He too is an exponent of the by-product hypothesis and believes that, from an evolutionary perspective, ‘art’ is something like strawberry cheesecake. The fondness for this delicacy is not a product of evolution, but the fondness for fat and sugar, for certain colours and aromas, certainly is. Those who threw themselves upon the nourishing bits first has better chances of survival and reproduction, and the legacy of these individuals is that we are enticed by compositions of fat and sugar of which our forebears could never have dreamt.²⁶ As adjuncts to a chat over a cup of coffee, these cultural inventions may also promote group cohesion...

Pleasure

So – pleasure is the thing. The diagnosis of ‘pleasure’ frequently appears in aesthetic discourse as explanation of last resort, whether as justification for a preoccupation with seemingly pointless things or as moralizing critique of ‘mere’ pleasure. This is highly plausible intuitively: We all know roughly what is meant from our own experience. This cheating self-evidence can easily conceal the fact that ‘pleasure’ itself requires explanation. What are the ancient selective pressures and benefits of pleasure and what new functions or effects might it have taken on?

Animals too enjoy themselves.²⁷ Karl Groos, a classical figure in the biological theory of play,²⁸ whose work is still well worth studying, was one of the first to make a point

²⁵ These ‘preparations’ in elder Darwinism used to be known as ‘pre-adaptations’. Gould replaces this quasi-teleological term with the neologism ‘exaptations’ or ‘exadaptations’, though ‘predispositions’ had long since taken hold.

²⁶ Pinker, Steven: *How the Mind Works*. New York: Norton 1997, p. 524f. An interesting discussion of contemporary trends in ‘literary Darwinism’ appears in Pinker, Steven: “Toward a Consilient Study of Literature”. In: *Philosophy and Literature* 31 (2007) H. 1, p. 162-178.

²⁷ For a rich but argumentatively rather unscrupulous account, see: Jonathan Balcombe: *Pleasurable Kingdom: Animals and the Nature of Feeling Good*. Basingstoke: Palgrave Macmillan 2006.

²⁸ Groos, Karl: *Die Spiele der Menschen*. Hildesheim, New York: Olms 1973 (first published Stuttgart 1899); Groos, Karl: *Die Spiele der Tiere*. Jena: Fischer ³1930 (first published 1896). English: Karl Groos: *The Play of Animals*. New York: Appleton 1898; Karl Groos: *The Play of Man*. New York: Appleton 1901. Reprints by Kessinger Pub Co 2005 and 2007.

of stressing the *Einübungs- und Selbstausbildungswert*²⁹ of play (its value as ‘rehearsal’ for later activities and as a means of ontogenetic accomplishment), a concept with which he replaced the old Surplus Energy Theory of play. “In contrast with later serious exercise (*Ausübung*), play enables a preparation (*Vorübung*) and practice (*Einübung*) for the special instincts”.³⁰ The notion of *Einübung und Selbstausbildung* appears in modern guise in the work of Leda Cosmides and John Tooby, two leading exponents of evolutionary psychology. But they also bring out points of contact with fictional literature and art as a whole, furnishing us with the first viable bridge from evolutionary biology to art/literature.³¹ They distinguish between a functional mode and an organizational mode in which adaptations are carried out. The organizational mode in fact refers to the play mode that is deployed with a view to *Einübung und Selbstausbildung*, that is, the ontogenetic completion of the organism. So the dog battles ‘furiously’ for the slipper, the bird soars through the air rejoicing meaninglessly and the lion cubs tussle over nothing. The organizational or play mode has a clearly identifiable use. This is especially evident in the case of young individuals that must develop their abilities and adapt them to the environment. It is less common for older animals to play. But they too must organize their cognitive apparatus, though in their case it is more a matter of servicing and maintenance than new developments. Human beings in particular, with their highly complex cognitive apparatus, continue to exhibit play behaviours into old age.

But the benefit of the organizational or pleasure mode does not show itself as an outcome of the actions themselves. It is a benefit that exceeds the time horizon of the player. And this is where we see the key function of pleasure as an *intrinsic* motivation. It would simply be foolish to chase after a rubber ball or a ball of wool only to get

On the Internet: http://www.brocku.ca/MeadProject/Groos/Groos_1898/Groos_1898_toc.html, and http://www.brocku.ca/MeadProject/Groos/Groos_1901/Groos_1901_toc.html (last visited 23. März 2010).

I was first alerted to Groos by Werner Strube.

²⁹ Groos, *Spiele der Tiere* (1930), p. 49 ff.

³⁰ Groos, *Play of Animals*, p. XX. Parentheses by the first translator Elizabeth L. Baldwin.

³¹ Tooby, John/Leda Cosmides: “Does Beauty Build Adapted Minds? Toward an Evolutionary Theory of Aesthetics, Fiction and the Arts”. In: *SubStance. A Review of Theory and Literary Criticism* 30, 2001, H. 1-2, Issue 94/95, Special Issue: *On the Origin of Fictions*, p. 6-27. German Translation: Tooby, John/Leda Cosmides: “Schönheit und mentale Fitness. Auf dem Weg zu einer evolutionären Ästhetik”. In: *Heuristiken der Literaturwissenschaft. Disziplinexterne Perspektiven auf Literatur*. Uta Klein/Katja Mellmann/Steffanie Metzger (eds.). Paderborn: Mentis 2006, p. 217-244. Brian Boyd contemns the bridge. He ignores the essay in his book, though he could have refined and enriched his arguments in light of it. Unfortunately, in his contribution to Gottschall/Wilson, *Literary Animal*, p. 168-170, he delivers some very substandard criticism. – Joseph Carroll in the same volume sketches a “caricature” (p. 80) of Evolutionary Psychology. But what’s the use of it? ‘EP’, as a consistent research program, may be laborious, but one cannot get its results without its strictness. See the review Eibl, Karl/Katja Mellmann: „Literatur als Repertorium der Soziobiologie“. In: *KulturPoetik* 7.2 (2007), p. 277-283, and forthcoming Mellmann, Katja: “Evolutionary Psychology as a Heuristic in Literary Studies”. In: *The Evolution of Literature. Legacies of Darwin in European Cultures*. Simon J. James/Nicholas Saul (eds.). Amsterdam: Rodopi (in press).

nothing at all in return. Such behaviour may in fact be very useful in that it strengthens the muscles, lends elasticity to the joints, adjusts the sense of sight, calibrates the sense of balance, and so on. Yet no cat and very few people think about subsequent utility while engaging in such activities. It is not utility that motivates people to perform such actions, but pleasure. And indeed – we have arrived at last at the crucial insight – the pleasure system as an *evolved adaptation*. Individuals who were motivated by pleasure to engage in *Einübung und Selbstausbildung* were reproductively superior to those who preferred to doze the day away.³²

What I have called pleasure, Tooby/Cosmides refer to as ‘aesthetics’. This is of course a provocatively broad conception of the aesthetic, but it does mark out the path towards art or the arts along which we can now travel. Which abilities, when exercised, are rewarded with pleasure by our motivational system? I shall disregard physical activities – sex, jogging, chopping wood, etc. – that would certainly repay in-depth examination, and restrict myself to our cognitive apparatus for processing and producing the world. And what we can say straight off is that the entire cognitive apparatus is capable of art in this sense, that is, every part (module, tool) of it may be activated in a way that involves no immediate objective and gives pleasure.

Constructing meaning through an adaptive toolbox

A glimpse at the plastic arts may help us approach our topic sideways-on.³³ The capacity for depiction is not, of course, the only disposition that makes them possible. Both the invention of abstract painting around 1900 and centuries of Islamic art demonstrate that visual art does not necessarily represent real-world objects. What we deploy here are elementary functions of our toolkit of geometric measurement.³⁴ We may elucidate this by noting that nature lacks perfectly straight lines, circles and consistent symmetry. Evolution has equipped us with measuring instruments that we apply to reality. These measuring instruments, as well as the perception of colour, must be constantly recalibrated, in other words checked to ensure a snug fit with reality. This

³² I suspect that this is reinforced by the stress-pleasure system: among the endocrinal consequences of constant stress is a marked reduction in reproductive ability. Accordingly, all activities that alleviate stress offer a reproductive advantage and are therefore reinforced by evolution. This is particularly effective in the case of human beings because of their exceptional potential for anxiety. See *Animal poeta*, p. 310-319, and “Survival oft the happiest. Über den Nutzen des ästhetischen Vergnügens”. In: *Evolution und Kultur des Menschen*. Ernst Peter Fischer/Klaus Wiegand (eds.). Frankfurt/M.: Fischer 2010, p. 197-219. I shall take the opportunity to mention a fairly typical misunderstanding at this point. My argument has been taken to mean that people who concern themselves with art have more sex than others. In fact I’m putting forward a causal explanation of why pleasurable preoccupation with useless things had any chance in evolutionary terms (ultimate causation). But once this pleasurable preoccupation with useless things has been genetically established, as ‘proximate causation’ it may also encourage anything from meditation in monastic solitude to symphony concerts.

³³ An outstanding work now is Eibl-Eibesfeldt, Irenäus/Christa Sütterlin: *Weltsprache Kunst. Zur Natur- und Kunstgeschichte bildlicher Kommunikation*. Wien: Brandstätter 2007.

³⁴ On this sort of art and its ‘gestalt’-psychological requirements see Gombrich, Ernst H.: *The Sense of Order. A Study in the Psychology of Decorative Art*. London/New York: Phaidon ²1984.

happens quite unconsciously. But we feel pleasure whenever the calibration process confirms the functioning of the measuring norm by accordance or by difference. This is pleasure at the fact that our cognitive toolkit is working properly. This pleasure is probably also the experiential basis of those idealist forms of aesthetics that conceive of ‘beauty’ as the harmonious perception of the order of the world as reflected in microcosm.

What we have touched on here with respect to visual perception can be applied to all other feats of structuring performed by our cognitive apparatus, to everything that philosophers have thought of as *a priori* knowledge or *a priori* forms of perception or categories.³⁵ Causality and teleology, for example, are tried-and-tested innate schematic templates or ‘gestalts’, as is the method of induction, which directs our attention to repetitions of all kinds and also allows us to produce them, from the regularities of everyday life to the construction of cyclical worldviews.³⁶ But it is not just rather formal ordering categories such as these that we find among our evolved and innate resources. We are also equipped with specific ways of processing meaning. These are particularly evident in a number of avoidance responses, which are, so to speak, ready to spring into action at any time in the shape of fears, from fear of snakes through fear of the dark to vertigo. Innate world-structuring instruments of this kind are also at work when we create fictional worlds. And the associated appeals to emotion also play a role in the perception of fictional worlds. This is because the original, evolutionary goal consists in testing and cultivating the responsiveness of our psychological apparatus.³⁷ Even ἔλεος and φόβος (‘pity’ and ‘fear’ or ‘lament’ and ‘shudder’), as identified by Aristotle as the effect of tragedy, can give pleasure because they allow us to enjoy our own capacity for pity and fear in a relaxed state. So I shall allow myself the half-serious joke of using old Aristotle’s mysterious catharsis to my own ends (as most ‘western’ aestheticians have of course done): If the arousing of pity and fear in tragedy leads to the cleansing of these (and similar) emotions, does this not mean that these emotions, having been liberated from *a posteriori* ties to goals and functions, are being switched into the organizational mode?

³⁵ See esp. the work of Gerhard Vollmer, such as: *Wieso können wir die Welt erkennen?* Stuttgart: Hirzel 2003. Unfortunately, evolutionary epistemology has been thwarted by futile squabbles over the existence of the world, which has obstructed its development as a genuine programme of scientific research.

³⁶ Eibl, Karl: “The Induction Instinct: Evolution and Poetic Application of a Cognitive Tool”. In: *Studies in the Literary Imagination* 42.2 (2009) (forthcoming).

³⁷ On the emotions in this context, see Mellmann, Katja: *Emotionalisierung – Von der Nebenstundenpoesie zum Buch als Freund. Eine emotionspsychologische Analyse der Literatur der Aufklärungsepoche*. Paderborn: Mentis 2006, which features a detailed discussion of fundamentals/theory, corroborated by proving it on a crucial period of German literature.

Analytical philosophers have discovered a paradox of fiction and a paradox of suspense,³⁸ which supposedly come about when we become emotionally engaged in fictional worlds: we become emotionally involved in made-up stories, even on the second reading/hearing in the case of exciting stories, despite knowing that they are made up or how they end. Yet paradoxy is a quality of formulations, not of reality (except for Hegelians of course), and as scientists of the real we would do well to align our formulations with reality. Otherwise we might just as well refer to the paradox of idle running whenever someone revs up the engine of a stationary car. The mechanic will explain to the gaping philosopher that the engine has been decoupled from the wheels and that the revs are being increased to test it.³⁹ In any case, this evolved capacity for decoupling mental programmes from their real purposes, and pleasure as the reward for such ‘purposeless’ activities, constitute a key prerequisite for art behaviour. It is because of this decoupling that behavioural programmes can be enjoyed as abilities in a kind of quarantine room, unhindered by real dangers or needs.

The problem of tension is rather more concrete than that of fiction, so we can make our analysis more concrete as well. Tension, in the sense of suspense or even mystery, arises from the unsettling expectation that an informational complex is being completed. A classic example of real tension may be the emotional state of the accused prior to the announcing of judgment. If he or she could relive this moment again and again, or wanted to do so, this would indeed be paradoxical (or perverse). Things are different with literature. Certainly, here too there are circumstances in which tension arises through incomplete information. Many jokes and riddles for example owe their effect to

³⁸ On the paradox of fiction, see Levinson, Jerrold: “Emotion in Response to Art. A Survey of the Terrain”. In: *Emotion and the Arts*. Mette Hjort /Sue Laver (eds.). New York, Oxford: Oxford UP 1997, p. 20-34, and Part I, “The Paradox of Fiction”, p. 37-92. Cf. the solution put forward by Mellmann, Katja: “Literatur als emotionale Attrappe. Eine evolutionspsychologische Lösung des ‘paradox of fiction’”. In: Klein et al, *Heuristiken*, p. 145-166. See also Mellmann, Katja: “E-Motion – Being Moved by Fiction and Media? Notes on Fictional Worlds, Virtual Contacts, and the Reality of Emotions”. In: *PsyArt. An Online Journal for the Psychological Study of the Arts* 6 (2002), http://www.clas.ufl.edu/ipsa/journal/2002_mellmann01.shtml ((last visited 23. März 2010) On the dummy solution, see also Schwender, Clemens: *Medien und Emotionen. Evolutionspsychologische Bausteine zu einer Medientheorie*. Wiesbaden: Deutscher Universitätsverlag 2006. – On the paradox of suspense, see Carroll, Noël (1996): “The Paradox of Suspense”. In: *Suspense. Conceptualizations, Theoretical Analyses, and Empirical Explorations*. Peter Vorderer /Hans J. Wulff/ Mike Friedrichsen (eds.). Mahwah NJ: Erlbaum 1996, p. 71-92. See also Mellmann, Katja: “Vorschlag zu einer emotionspsychologischen Bestimmung von ‘Spannung’”. In: *Im Rücken der Kulturen (Poetogenesis 5)*. Karl Eibl/Katja Mellmann/Rüdiger Zymner (eds.). Paderborn: Mentis 2007, p. 241-268; Recent: *Zwischen Text und Leser. Studien zu Begriff, Geschichte und Funktion literarischer Spannung*. Ingo Irsigler/Daniela Langer (eds.). Munich: text+kritik 2008.

³⁹ The technical simile is been offered by Cosmides/Tooby in their seminal paper *Consider the Source*: “Like a clutch in an automobile, supposition and other scope operators allow the controlled engagement or disengagement of powerful sets of representations that can contain rich descriptions and acquired, domain-specific inference engines that can be applied when their preconditions are met. These operators provide vehicles whereby information that may or may not be counterfactual can be processed without the output being tagged as true and stored as such.” (p. 67)

the fact that an incomprehensible state of affairs – or even a merely inappropriate one – has been recontextualized by a new piece of information. Again, this effect cannot be repeated, as you would first have to repeat the stage of inadequate knowledge as well. Much the same applies to low-brow literature, such as detective stories good for only one reading, in as much as they are sustained solely by the question of “whodunit?”. But even if there is no tension of this sort, this still leaves us with the function of expectation as a means of ensuring narrative cohesion, and this holds true even if the point of the story is revealed right at the start. One example is Homer’s *Odyssey*. We already know after the first few verses that Odysseus will return home to Ithaca. The story cannot finish until then. In this case, expectation has the function of delimiting the scope of the game. Even if a vast kaleidoscope of events occurs as the story unfolds, it is not limitless. Odysseus will return home; of this at least we can be certain.

Expectations or the act of focussing our attention on certain elements in a literary text essentially adhere to the same schematizations of the world that we use to guide us in everyday life. But this also means that we operate with innate ‘shaping’ schematizations of the world even in our reception of literary works. Referring to the example mentioned above, the *Odyssey*, and related texts, classicist Walter Burkert has come up with the term ‘fantastic quest’, a form deployed in literature in a huge range of ways.⁴⁰ I myself have attempted to extend this approach a little further by interpreting epic triads in general, featuring separation and reunion, as innate plots.⁴¹ We could identify other sequential schemata, such as the principle of detection in the analytical drama and detective story, which sets in motion our innate ‘cheater detector’,⁴² or the expectations linked with the appearance of two individuals of different gender and of reproductive age. If, on the other hand, two individuals of the same gender and equal status appear, we won’t have long to wait before they face each other in a duel (at least if these individuals are male – a special problem). Justice is one of the most valued goods in human culture. But even justice is rooted in biology.⁴³ Though authors have been laughing at poetic justice for more than two centuries, as a principle of reception it is nonetheless deeply rooted in our sense of expectation and almost entirely dominates

⁴⁰ Burkert, Walter: *Kulte des Altertums. Biologische Grundlagen der Religion*. Munich: C. H. Beck 1998. 75f. English: *Creation of the Sacred. Tracks of Biology in Early Religions*. Cambridge MA: Harvard UP 1998.

⁴¹ Eibl, Karl: “Epische Triaden. Über eine stammesgeschichtlich verwurzelte Gestalt des Erzählens”. In: *Journal of Literary Theory* 2/2 (2008), p. 197-208. –

⁴² This is a module for which there is plenty of empirical evidence, one that renders us particularly alert to possible deception. See for example Cosmides, Leda/John Tooby: “Can a General Deontic Logic Capture the Facts of Human Moral Reasoning? How the Mind Interprets Social Exchange Rules and Detects Cheaters”. In: *Moral psychology*. W. Sinnott-Armstrong (ed.). Cambridge, MA: MIT Press 2008, p. 53-119.

⁴³ Voland, Eckart: “Von der Ordnung ohne Recht zum Recht durch Ordnung. Die Entstehung von Rechtsnormen aus evolutionsbiologischer Sicht”. In: *Zur Entwicklung von Rechtsbewusstsein*. Ernst Joachim Lampe (ed.). Frankfurt/M.: Suhrkamp 1997, p. 111-133. Cosmides, Leda/John Tooby: “Evolutionary Psychology, Moral Heuristics, and the Law”. In: *Heuristics and the Law*. Gerd Gigerenzer/Christoph Engel (eds.). Cambridge, MA: MIT Press, 2006, p. 175-206.

low-brow fiction. As it does the secondary literature, which is engaged in a tireless quest to establish the ‘guilt’ of unfortunate heroes and heroines! If our sequential expectations are fulfilled, this is always an occasion for pleasure, as it confirms the accuracy of our schematic tools. This is no different than when we perceive the symmetry of objects that confirm our measuring norm.⁴⁴

Gerd Gigerenzer and colleagues have coined the inspired term ‘adaptive toolbox’ to refer to our mind’s basic cognitive equipment as generated by evolution.⁴⁵ ‘Toolbox’ is an analogy closely related to the analogy of the Swiss army knife by Cosmides/Tooby. This toolbox contains a collection of rules of thumb, heuristics and individual tools that have developed over the course of evolution and which we continue to deploy today. The analogy of the toolbox conveys better than the analogy of the army knife the potential of differentiating between context of origin and context of application, of the ‘misuse’ of tools for a novel purpose, of using several tools to solve a problem, etc. These insights, compatible with the everyday experience of every do-it-yourselfer, allow us to dispense with lengthy theoretical discussions on all-purpose tools and domain specificity.

Outlooks

It will surely come as no surprise that it is primarily in the cognitive sciences, as well as that field of endeavour which goes by the rather peculiar name of ‘cognitive literary studies’, that I seek the insights that biology can offer the sciences of humanity.⁴⁶ Certain fields of research – and much speculation – within evolutionary psychology exhibit a near-maniacal preoccupation with the topic of gender difference and gender relations.⁴⁷ As a result, we may easily forget that one indispensable prerequisite for reproduction is surviving long enough. As an aspect of survival, fitness confronted men and women with the same cognitive problems, which had to be coped with using the same cognitive means. The fact that the term ‘cognitive sciences’ is a very vague one suits me down to the ground in this context. This is because I see it not so much as a set of findings than as a research programme or perhaps just an intention, namely the intention to make the humanities an empirical or objective science of the mind.

Here, evolutionary psychology can function as an integrating perspective. In terms of biology, cognitivists search for the proximate causations of our behaviour; evolutionary

⁴⁴ See Eibl, Karl: Poetische Gerechtigkeit als Sinngenerator, in: Poetische Gerechtigkeit – Weltliteratur und Wertung. Sebastian Donat/Roger Lüdeke/Stephan Packard/ Virginia Richter (eds.). Düsseldorf UP 2010 (forthcoming).

⁴⁵ Gigerenzer/Selten, *Bounded Rationality*

⁴⁶ For a recent attempt to take stock of this field, see: *Literatur und Kognition. Bestandsaufnahme und Perspektiven eines Arbeitsfeldes*. Martin Huber/Simone Winko (eds.). Paderborn: mentis 2009. See esp. Zymner, Rüdiger: “Körper, Geist und Literatur. Perspektiven der ‘Kognitiven Literaturwissenschaft’ – eine kritische Bestandsaufnahme”. p. 135-154.

⁴⁷ See the contributions in the official organ of the relevant scientific society at <http://www.ehbonline.org/issues> (last visited 23 Mar. 10).

psychology searches for the ancient ultimate causes of these proximately acting mechanisms. So evolutionary research does two highly significant things for us. The first is to serve as a monitoring device. Whatever we consider to be part of the human being's *universal* basic mental equipment ought to be explicable in an evolutionary manner, either as an adaptation or a by-product of an adaptation.⁴⁸ A classic example is the death-wish postulated by some psychoanalysts, which is impossible in evolutionary terms – at least in a literal sense – and so should not be considered part of our basic equipment. (Which does not rule out the possibility that a “Sickness unto Death” à la Kierkegaard might appear as a by-product of an adaptation under certain individual or cultural circumstances.) And if someone were to assert the existence of a genotypical cheesecake-wish we would have valid reasons to dispute this as well, even if experience has taught us that it may occasionally exist phenotypically under certain cultural conditions... But the biological perspective also allows us to get beyond the quasi-Linnean approach of certain schools of cognitive science. Carl Linneaus was what we would now call an exponent of intelligent design. He produced a system for classifying the natural world in which the plants and animals were arranged according to their characteristics, and he considered this arrangement a likeness of the divine order. But he gave no particularly valid reasons for selecting these characteristics. His definition of the primates is an example. He lists their characteristics as four upper, parallel incisors, two mammary glands on the chest of the female and the pendulous penis of the male, putting us in the same biological order as bats and sloths. Biologists have been trying for some time to replace this ‘artificial’ system with a ‘natural’ one inspired by real phylogenetic trees. We are faced with similar tasks if we wish to investigate the basic cognitive equipment of the human being. Order is certainly desirable, but it is no guarantee of truth. Here, biology provides us with a level of the causes of things that adds a deeper understanding to superficial findings.

We might also say: the biological perspective allows us to reconstruct how the tools were made and got into the toolbox. We work with these tools when we construct the world, and the recipients of a text also work with them when they (re-)construct the meaning (the ‘world’) of a text. Once this text has been identified as a literary text through appropriate signals and placed in quarantine, they can enjoy the play of cognitive adaptations free of pragmatic considerations. They can even enjoy offences against these adaptations, because it is just such offences that render the adaptations especially palpable. To make a connection with the example with which we began, the principle of poetic justice demands that those such as Faust who make pacts with the Devil are in fact carried off to hell in the end (unless they feel the deepest of regret in good time). In Goethe's *Faust*, however, at the moment of his greatest triumph and greatest delusion, the unrepentant villain is “adroitly snatched” away (“pfiffig weggeschnappt”) from the waiting Devil as a result of the angels' nasty trick and carried off to Heaven where the Mother of God awaits him. This was an irritation even for

⁴⁸ On the distinction between cultural universals and universal dispositions, see Eibl, Karl: “Universelle Dispositionen und manifeste Fast-Universalien”. In: *Erwägen Wissen Ethik* 20 (2009), forthcoming.

many contemporaries, both pious and full-bloodedly German ones, and is still seen as deserving of criticism today. But you can also enjoy it as providing a welcome defamiliarization of the old schema, provoking some new mental activity.

But we don't have to stop at enjoyment. Even if utility provides no adequate justification for assessing art and literature as biological adaptations, in no way does this mean that they are generally useless, mere 'cheesecake'. But utility comes about only as a result of the cultural processing and combining of biological adaptations. Here, the pleasure principle of play may be deployed as bait and decoupling device in order to serve new functions. I call this the *secondary severity*.⁴⁹

Horace supplemented his much-quoted "Aut ... aut" with a following synthesis:

aut prodesse volunt aut delectare poetae
aut simul et iucunda et idonea dicere vitae.

A bard will wish to profit or to please,
Or, as a tertium quid, do both of these.
(transl. John Conington.)

The instrumentalization of pleasure to sugar the sometimes bitter pill of the truth has been going on since time immemorial. From this point of view, it is indeed correct to state that literature serves the preservation and transmission of information – that it *may* do so. Torturous material to be learned by heart is endowed with an element of pleasure when turned into a rhyme, and tiresome abstract rules attain plausibility through stories. But speech unburdened of the need to produce solutions to immediate problems may also allow us to formulate, communicate and agree on states of mind, and this may promote group coherence. Finally, even unresolved contemporary problems may be formulated in this protected area with a radicalism that other agencies of problem-solving avoid if at all possible. The structural formula of tragedy – insoluble conflict plus half-innocent corpse – expresses the contradictions but places them in the quarantine of fiction in such a way that there is no immediate need to act. So we could compile a large catalogue of all the various useful effects that may be coaxed out of literature under varying cultural conditions, from the counting-out rhyme to myths relating the origins of the world. These are new, variable problem solving devices or tools which, depending on the problem at hand, are created on the basis of the old biological adaptations – and which we may continue to regard as worthy objects of literary history.

⁴⁹ Eibl, *Zwischenwelt*, p. 169f.

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Translated by Alex Skinner. – I thank Katja Mellmann, Volker Heeschen, and Eckart Voland for comments of earlier drafts.