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Literature and Emotions from the Perspective of Biology

A heuristics based on evolutionary psychology is put forward here as a possible way of describing the emotional effects of literature. An approach based solely on textual analysis can examine only the *representation* of emotions in a text, but the approach of literary psychology allows for a correlation of text structure and the mind of the reader and, thereby, for hypothetical statements about emotional *effects* of a text. Evolutionary psychology has the particular benefit of providing access to certain very fundamental mechanisms of emotional effect that are not as a rule accessible via introspection. Thus, the evolutionary theory of biology allows us to assume that there are a variety of emotional programs, the existence of which can be made plausible by referring to their adaptive function in the process of human evolution. A specific schema of stimuli can be identified as the trigger of each such emotional program, and literary texts can then be analysed in search of these schemata. When an emotional program is triggered by a textual stimulus, the effect can be described as one of *dummy stimuli*, since the triggering object is not as a rule identical with the object in relation to which the emotional program in question developed in the course of evolutionary history – it merely fits the same schema of stimuli.

The article begins by introducing the theory of emotions in evolutionary psychology that underlies this model of a literary ›dummy‹. Central here is the distinction between the trigger mechanism and the program that controls the course of an emotion. The trigger mechanism identifies the triggering stimulus, initiates early physical reactions, and activates a specific strategy of cognitive processing. The program controlling the course of an emotion, on the other hand, performs a second appraisal of the situation and configures a person's behaviour on the basis of the options available in the emotional program. This decoupling of stimulus and behavioural response by means of the intervening program explains, among other things, why we respond to fictional stimuli in a way similar to, but not identical with how we respond to real stimuli: fictions trigger the same emotions as those that present themselves in real situations, but they take a different course because the situational feedback is of a different kind. In normal circumstances, we will ›feel in a similar fashion (we will register the same physical and cognitive activations) but act differently (more specifically, not at all in most cases).

The second part of the article outlines the adaptive significance of imaginary worlds for the ontogenetic development of the brain. In order to build up innate mechanisms during individual development, keep them ready to function, and adapt them to the cultural environment present in any given case, reasons must

be found for activating them repeatedly (and, as far as possible, in situations where pragmatic factors are not involved). Literature would seem particularly well suited to activating a range of cognitive and emotional adaptations and thereby ingraining them ontogenetically. Evolution motivates us to recognize such opportunities by what Karl Bühler has called »function pleasure«: the secretion of pleasure hormones that accompanies our actions ensures that we voluntarily accept this kind of superficially pointless (»playful«) activity and pursue it with the necessary persistence. Evolutionary psychology thus provides a concept of function pleasure that explains why we enjoy the emotional effect of works of art and why apparently paradoxical phenomena such as the »joy of grief« or »agreeable horror« can occur.

Taking the aesthetics of landscape as an example, the third part of the article presents evolved motivational systems (i.e. systems of aesthetic preference) with an evolutionary basis and illustrates them using the *locus amoenus* and *locus terribilis* of literature. From our ancestors' need to identify habitats that were safe and rich in food, we can derive a series of preferences for scenic features that once corresponded to these requirements but are today felt to be pleasing or beautiful for no apparent reason. Stimuli such as lush vegetation, a good field of view, and shelter from the elements are approach stimuli, or »appetitive« stimuli (Jeffrey A. Gray) that guide our behaviour without our having to think about it. It follows that their use in literature, as in the topos of the pastoral idyll, should lead to a positive emotional response. Conversely, a set of repulsive, or »aversive« stimuli of aversion can be identified; they bring forth behaviour of fearful avoidance or restraint. In literature, such stimuli are familiar above all from the motifs associated with the sublime.

The fourth section of the article uses two pieces of work in film studies to describe two particular emotional responses together with the textual stimuli that correspond to them. The response of crying (the emotion of »sentiment«) is traced back to the »capitulation response« (Helmuth Plessner) as an innate response of helplessness and submissiveness in the face of the overwhelming. Crying is thus linked to resultative plot events in narrative texts. Whenever a plot reaches a point at which there is nothing left to hope or to fear, with the reader forced to accept that a given state (the death of a character, a proven virtue, and the like) is definitive, the sentimental reaction of crying is triggered on the basis of a structural isomorphism between the experiential unit and the evolutionarily grounded trigger schemata of the capitulatory reaction.

Likewise, the reaction of laughter is then presented as a domain-specific psychological response program. Laughter as a signal of willingness to cooperate may have left a particular mark on human evolution in situations of mild social tension – situations in which social cohesion was threatened but could still be restored. Accordingly, it is possible to identify as suitable stimuli for the reaction of laughter those textual structures that, by means of »nonsevere faults«, present ob-

stacles to understanding and thereby create a nonseriously stressful communication situation for the reader. In addition, the speaking entity of literature that is in this respect a humorous one functions as an appetitive social stimulus.

Finally, the fifth section of the article deals with the social attractiveness of fictive characters and the speaking entities of literature. Here, a hierarchical typology of four levels of attachment is put forward; it allows well-known phenomena of quasi-social reader behaviour to be grouped together and linked to particular psychological mechanisms. The ability to recognize psychologically imbued beings can be seen as the lowest level of attachment; it can be traced back to our ability to distinguish between animate and inanimate objects, and determines what things our empathetic activity applies to in a literary text. The second level of attachment is called ›partiality‹ and refers to the recognition of a member of one's own group (of one's own community of values and the like; or, in our evolutionary past, of one's own clan). It determines who the reader's heart beats with. The familiarity with fictive people that constitutes friendship can be introduced as a third level of attachment. This familiarity explains the reader's bonds of affection towards the fiction, and, as one of their consequences, the pain of separation felt on finishing a book. The fourth level of attachment involves not so much ties of friendship as love for a particular individual. Forms of expression typical of love can be observed primarily in fan cults (for example, the Werther cult).

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