

The Power of Art

Winfried Menninghaus, a researcher at the **Max Planck Institute for Empirical Aesthetics** in Frankfurt am Main, is studying how people react, not just mentally, but also physically to poetry and prose. For many classical philologists and Germanists, his work is a betrayal of their disciplines. But the scientist and his team have actually succeeded in rendering the effect of poetic and rhetorical language measurable for the first time – even in such intangible categories as elegance or such curious phenomena as the trash film cult.

TEXT **MARTIN ROOS**

Among the greenery in the interior courtyard of the Max Planck Institute for Empirical Aesthetics stands a row of pink-colored letters of nearly human height. Their reference to beauty (*“schön”*) seems to point rather insistently to precisely what the researchers here are concerned with. “No, no,” Winfried Menninghaus protests, half laughing, half resigned. It was the real estate company that erected the illuminated sculpture to advertise the building. “Pure coincidence,” says Menninghaus about the “kitsch in pink,” clapping his hands together. A tall, lean man with untamed hair that sticks out like that of Doc Brown, the inventor in the fantasy film *Back to the Future*, he is head of the Language and Literature Depart-

ment and Founding Director of the Institute, which was established in 2012.

It is more than mere beauty that matters here. The researchers investigate how people react physiologically to aesthetic stimuli – to film, dance, music or, yes, language and poetry. “Who likes what and why?” is their alliterative slogan. “We develop aesthetic theories that integrate approaches drawn from philosophy, psychology and neuroscience,” says Menninghaus, “and we subject them to a variety of tests.”

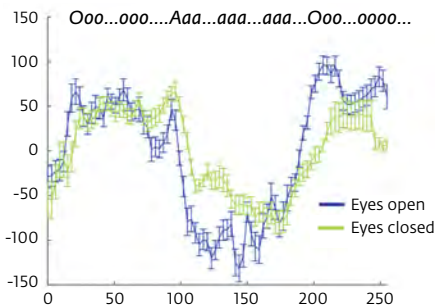
A MINIATURE CAMERA FILMS THE GOOSE BUMPS

Here, watching films and listening to music and poetry is an act undertaken in the service of science. But it would be a mistake to imagine the test

participants lying around on soft cushions and plied with exquisite beverages while Scheherazade whispers poems to them and Josephine Baker performs an interpretive dance of the alphabet. The Institute procedures call to mind a medical research laboratory. The test persons are seated in soundproof booths, where sensors attached to their fingertips measure skin resistance, monitors on their wrists record their heart rate and, depending on their emotional state, a miniature camera films the goose bumps on their arms. Some of them wear an electrode cap on their head to record the activity of nerve cells in the brain. “Almost everything can be measured nowadays,” explains Menninghaus, “such as how long a participant spends looking at which word.



Individual impact: Art need not be beautiful – it can appeal, move and exhilarate, but also shock or disturb.



Top Kurt Schwitters reciting his *Ursonate*, a poem consisting solely of sounds.

Bottom At a performance at the Institute, the researchers discovered that the middle part of the second movement appealed less to the audience than other parts. Surprisingly, the effect was more marked among those who watched than among those who closed their eyes.

That gives us an indication of the dynamics of attention processes."

Since the beginning of his academic career, Menninghaus has been concerned with researching the effects of beauty and basic features of aesthetic sensibility. Today he is regarded as one of the most versatile and simultaneously most controversial literary scholars – he is no stranger to criticism. Menninghaus is aware of the silent arrogance with which natural scientists look at such a "soft" discipline as aesthetics. He also senses the deep skepticism that most literary scholars feel for the methodologies of natural science, and thus also for him. Critics ask: How is one supposed to measure the quality of a poem by such criteria as twitching eyes and sweating armpits? Are Menninghaus and others like him like the alchemists of old in search of the formula for gold – or in this case, the recipe for the perfect poem?

"Of course not," says Menninghaus, "we don't do recipes here. It is primarily a question of perception." He shrugs off the accusation that his research is just "nitpicking." But the tendency on the part of many colleagues to use "poetics of effect" as a term of abuse is something he cannot accept.

Menninghaus cites the great linguist and semiotician Roman Jakobson, who once taught that our "poetic language function" is always "on." Accordingly, we perceive an aesthetic quality in even quite banal sentences. The Max Planck researcher looked about for proofs of this thesis – and found them: "We can now say that Jakobson was right. Because we see proof of the omnipresence of the poetic language function daily at our Institute."

Together with ten colleagues, including Germanists, literary and film scholars and neuroscientists, Menninghaus is constantly developing new categories and methods to meaningfully describe features that have an aesthetic impact – from verbal descriptions such as "beautiful", "boring", "exciting" or "humorous" to comparative studies of language structures in terms of rhythm, meter or linguistic melody.

POETRY IS AS STIRRING AS MUSIC

In the Institute's own ArtLab, a kind of multifunctional concert and event space filled with high-tech audio-video equipment and wiring harnesses for test persons, two Institute staff members have been testing the effect of Kurt Schwitters' by no means easily digestible Dadaist *Ursonate*: neuroscientists and linguistic psychologists Mathias Scharinger and Valentin Wagner invited 44 volunteers – individuals who were not entirely averse to Schwitters' idiosyncratic sense of humor – to the ArtLab. But why choose such a hybrid



Measured audience: In the ArtLab, a performance space equipped for research, the scientists can measure the physical effects of artistic presentations. For example, skin resistance measured at the fingers can give clues to the emotional excitement of the spectators.

piece of music, such a disturbing mix of primitive and monkey calls, of throaty and mating song?

"We deliberately wanted to exclude the semantic level, to focus purely on the sound level," says Scharinger. The researchers used monitors and electrodes to measure heart rate and skin conductance. Both during and after the concert, the test persons were also required to answer questions about the effect of the live performance and their emotional state via an electronic tablet. A large number of adjectives were available to define their aesthetic verdict – from "intense" and "melodic" to "demanding" and "chaotic" to "irritating" or "absurd." The researchers' goal was to discover the connection between the acoustic parameters, the purely subjective reports by the audience and their physiological reactions.

No final results are available as yet. However, the scientists expect a treasure trove of findings: "Once we have precisely analyzed which acoustic and linguistic properties correspond with

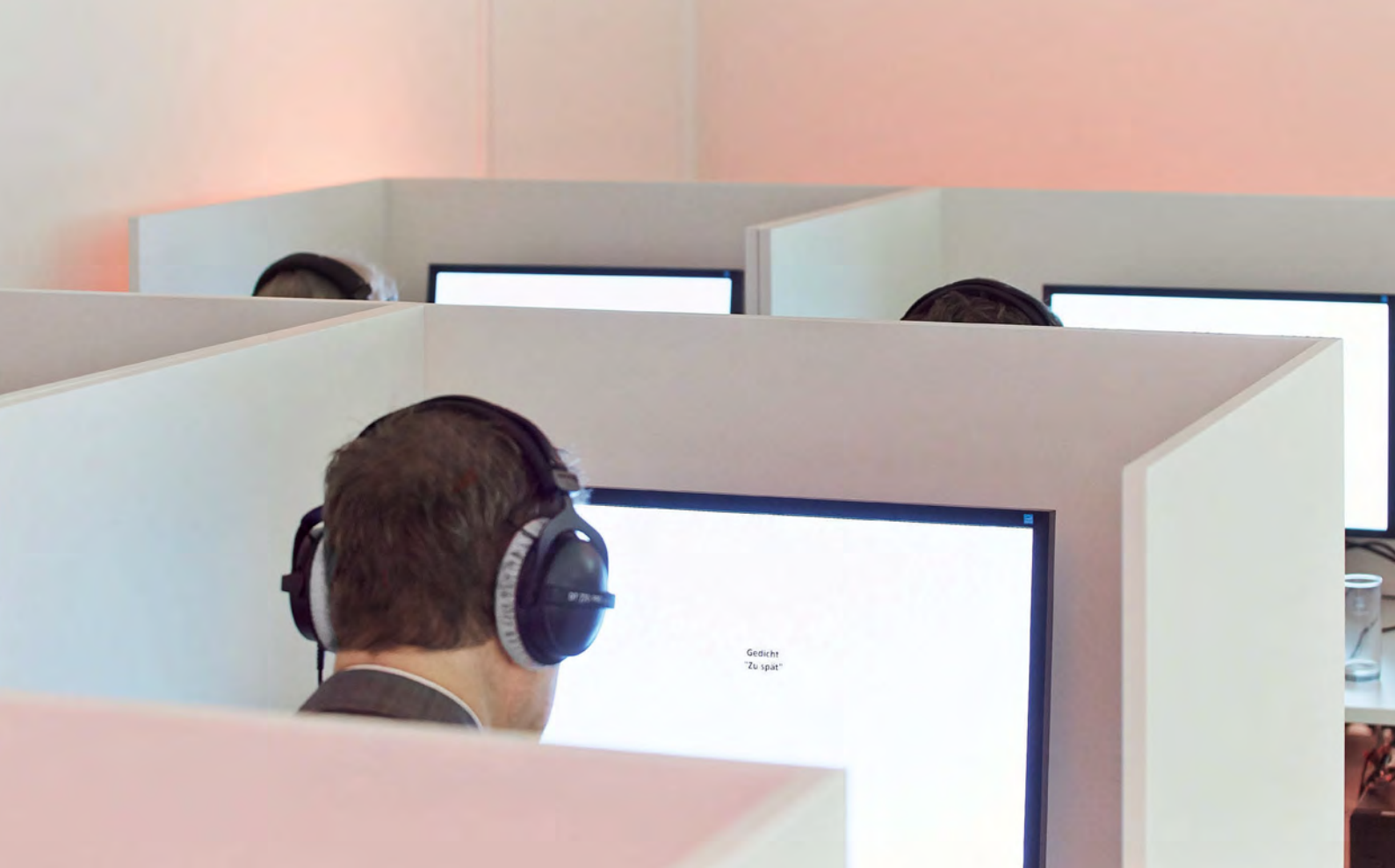
which physical reactions," Wagner explains, "we will be able to provide information on the linguistic properties down to the exact syllable" – in other words, which highs and lows, which combinations of consonants and vowels trigger accelerated heart rate, boredom or even rejection. One thing is certain: "Regardless of which texts we hear or read, our physical selves always respond," Menninghaus adds.

Poetry moves us emotionally almost as much as our favorite music, he explains. The powerful effect of lyric verse is attributable to the fact that not only have we for many generations – at least since ancient times – been familiar with metrical speech, with Christian hymns and later with folk songs, but each of us has since birth, through preverbal communication with our parents, become accustomed to verse and rhythm. To oversimplify the point: "It is through verse that we come to language," says Menninghaus. This is why our attention is particularly drawn to rhythm and rhyme. The researchers demonstrate this using

structured sentences from which certain stylistic features are specifically removed in order to see which ones stimulate the aesthetic desires of readers or listeners and in what way.

THE MORE TEARS, THE GREATER THE ENJOYMENT

When the phrase "planets are ill prophets" is presented to test subjects without the alliterative rhyme ("the stars are ill prophets"), the statement has a measurably lower "presence," or expressive power. If not the rhyme, but the rhythm is removed from the original sentence, as in: "planets are highly unreliable prophets," the statement is also reduced in effect. Devoid of both rhyme and rhythm, the sentence regains some of its presence, not least because it is now clearly understandable: "stars are not trustworthy prophets." However, of all the sentence variants, despite the somewhat crude content, the original statement "planets are ill prophets" unambiguously achieves the greatest impact. The rea-



Listening for science: Test persons listen to a poem before answering questions on how moving and how beautiful they found the verses to be. In this way, the researchers can compile aesthetic judgments on works dating from different eras.

son is that our aesthetic and affective perception responds more strongly to metrical language.

"We also respond attentively to sentences or verses when they violate certain rules," explains Menninghaus. For instance, Ikea's German slogan "*Wohnst du noch oder lebst du schon?*" (Are you still living, or are you already alive?) violates several rules. The question "Are you still living?" is abbreviated and should normally read something like: "Are you still living in your old apartment?" And "Are you already alive?" is paradoxical, given that one may be "still" alive, but hardly "already" alive. Taken together, the two questions would be entirely meaningless were it not clear that this is a message from a furniture store. "Our brains have to work hard and fill in gaps to decode the sentence. And that is what makes it so pithy," explains Menninghaus.

For a long time the Menninghaus team also pondered the question of whether positive and negative feelings, joy and sadness, cancel each other

out when appreciating art. They found that it is just the opposite. "The measurement curves for physical reactions to negative and positive effects both peaked at almost exactly the same time," says Menninghaus. To put it another way, the more the tears flow, the greater the enjoyment is. It's a matter of "being moved."

ELEGANCE CAN ENDURE INTO OLD AGE

And that, for Menninghaus, brings things full circle, back to an ancient discipline that had long been forgotten, not least due its misuse during the Third Reich: rhetoric. "Among its wealth of figures of speech and poetic features, there were always some important factors that determined aesthetic appreciation," Menninghaus explains. But rhetoric was scarcely perceived in this way any longer. It is precisely the *movere* of ancient rhetoric, the power to move, to stir and to shake up, that fascinates Menninghaus.

It was not without reason that he and his team conducted several studies on "being moved." These impressively show that "being moved" almost always involves a mix of joy and sadness. Thus, ancient rhetoric remains highly modern. Which is another reason why Winfried Menninghaus is very keen to amalgamate the language production elements of rhetoric with aesthetic theory, literary and musicological analysis techniques, linguistic modeling and the latest methods and theories in the fields of psychology and neuroscience.

One of Menninghaus' latest projects addresses the subject of elegance. "Judgments on elegance generally overlap broadly with judgments on beauty," he says. An elegant car is also judged to be a beautiful car. On the other hand, not everything that is beautiful is also elegant. To establish the fine distinctions, the researchers have introduced two further categories: grace – which borders closely on elegance – and sexiness, or sexual appeal – which also falls within the broad field of beauty but has little overlap with elegance.

To be able to make psychometrically well founded statements about the beauty, elegance, grace or sexiness of an object, it isn't sufficient to simply ask how beautiful, elegant, graceful or sexy the object is. It requires numerous features that correlate positively or negatively with elegance. Menninghaus and his team have therefore studied elegance as a highly multidimensional construct with associations such as "fine," "tasteful," "fluid," "harmonious," "valuable," "unpretentious," "light," "slender" and many more.

The researchers evaluated such attributions and combined the results to be able to make reliable, nuanced statements about the elegance of a wide variety of objects – from cutlery to lingerie and nightwear to yachts, luxury hotels and bridges. The "near-perfect dissociation between sexiness and elegance" is particularly striking in relation to age: while much sexiness may be expected of young men and women, elegance is not. And for older men and women, the precise opposite applies. Beauty, says Menninghaus, is right in the middle of that: it outlasts the high degree of sexiness expected of young women and men by around two decades before declining steeply, leaving elegance as the sole manifestation of good looks that is achievable up to an advanced age. Elegance scores peak only among the over-50-year-olds and can in some cases endure far beyond the age of 80. "Compared with the age profiles for sexiness and beauty, the profile for elegance exhibits the smallest differences between men and women," explains Menninghaus – a result with huge potential, not

least for the clothing sector. "The fashion industry still lacks an understanding of this connection."

WE OFTEN LIKE WHAT WE ARE FAMILIAR WITH

For all the rigors of science, the exuberant researcher is always ready for some serious fun. For example, when one of his staff, film scholar Keyvan Sarkhosh, asked trash movie audiences, "Why are you watching this?", the results proved to be quite a surprise. "The very first answer cited boredom with the mainstream and frustration with the propensity of Hollywood to constantly replicate itself," says Sarkhosh. The re-

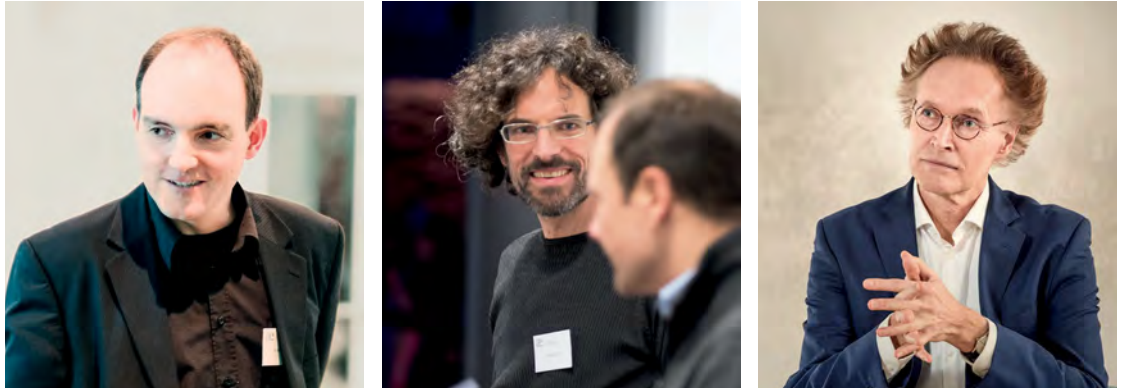
searcher chose shark horror films as his examples – among them *Sharknado*, an American disaster movie dating from 2013 with several sequels.

Critics panned *Sharknado* with its flying, man-eating sharks, blood, gore and screams as "absolute garbage" and "the worst film of the year" – but "quite amusing" for all that. And that is just the point: some consider the story of the monster sharks to be devoid of style or taste, while others see it as an artistic treat of a decidedly different kind.

The genuinely surprising and, for the public at large, most important finding of the study is that the trash film audience – with an average age of

Popular man-eaters: Sharks often play a central role in trash movies such as *Sharknado*, a disaster movie with several sequels and an astonishing number of fans. A study revealed the trash movie audience to be educated to an above-average standard and interested in culture.





Creative team: To render the effect of literature measurable, Winfried Menninghaus (right) works with a team of researchers drawn from various disciplines. Among them are neurolinguist Mathias Scharinger (left) and philosopher and psychologist Valentin Wagner (center).

35 – is by no means comprised of individuals of low intelligence or educational achievement. On the contrary: “Our subjects proved to have an above-average standard of education. They have numerous cultural interests, visit theaters and museums, and watch niche TV channels such as Arte,” explains Sarkhosh.

WELCOME TO POP CULTURE

For one thing, trash fans take pleasure in watching anti-films with a certain ironic detachment. Their enjoyment is primarily a product of their aesthetic interest in the realization of clichés and allusions to B movies they have seen before. “An important factor in determining what people like or don’t like is what they have already seen or perceived in the past – for example in their teens or mid-twenties,” Sarkhosh adds. Menninghaus describes this phenomenon, the familiarity principle, as one of the “strongest determinants of aesthetic enjoyment.”

The idea of art devoid of beauty, the phenomenon that objects that by common standards are perceived as ugly can also possess an aesthetic appeal of their own, is not new. It was

familiar even in ancient times, the depictions of the satyrs being one example. The guilty pleasure derived by connoisseurs of trash movies is a kind of cinematic celebration of tastelessness. According to Sarkhosh, it can be attributed to carnivalesque culture – a “counterculture that allows unorthodox freedoms.”

For Winfried Menninghaus, there were two other reasons why the trash study proved surprising: “The data was clearer and more meaningful than we had expected.” And: “What we couldn’t even remotely have anticipated was the huge media response to the publication of our study. Welcome to

pop culture!” Within six weeks, more than 1,000 reviews appeared in newspapers the world over, with interview requests from as far away as Africa. Menninghaus is still amazed: “I’ll never manage that with all our other studies put together.”

Who knows. Keyvan Sarkhosh is already working on a new study. This time, the focus is on fans of kitsch movies and their passion for sugar-sweet, rose-tinted feel-good movies with a guaranteed happy ending, like *Pretty Woman* or *Dirty Dancing*. Of course, the question will be the same here as well: “Why do you even watch this?” We wait with bated breath. ◀

TO THE POINT

- Scientists are measuring the strong emotional effect that literature has on individuals: rhymes and sentences or verses that violate certain rules particularly attract our attention.
- The researchers also use surveys to determine what distinguishes aesthetic judgments such as “elegance.” It is striking that people are increasingly described as elegant from their fourth decade onward.
- The trash film research project is gathering data on the viewers of this genre and their love for ugliness.

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