




ARTICLE



<https://doi.org/10.1057/s41599-021-00764-3>

OPEN

Who reads contemporary erotic novels and why?

Maria Kraxenberger ^{1,2✉}, Christine A. Knoop ¹ & Winfried Menninghaus¹

In the wake of EL James's series *Fifty Shades of Grey*, the book market has seen a veritable surge of bestselling erotic novels over the past decade. The online study reported here pursued two questions: (1) Who reads these erotic novels? (2) What are the reasons underlying this preference? Most of the readers of erotic novels that responded to our survey are heterosexual women in committed relationships. They are highly educated, from a broad age span, describe themselves as avid readers and like to share their reading experiences with others. Distraction and feelings of ease were identified as prime rewards associated with reading erotic novels. The sexual explicitness of the novels and their potential to provide guidance in life also play a role, yet turned out to be less important than suggested in previous research. Contrary to critical opinion, our participants consider erotic novels—at least to a certain degree—to be emancipated, feminist, and progressive. We relate this finding primarily to the surveyed participants' rather traditional beliefs regarding gender roles. Our study is the first to explore empirically the readership and the reading rewards underlying a current large-scale cultural phenomenon, emphasizing the need for future investigations off the literary canon.

¹Department of Language and Literature, MPI for Empirical Aesthetics, Frankfurt am Main, Germany. ²Digital Humanities Lab, University of Basel, Basel, Switzerland. ✉email: maria.kraxenberger@gmail.com

Introduction

Novels featuring explicit depictions of sexual fantasies and acts have been popular for a long time. In the past decade, however, the book market has seen an unprecedented surge of erotic novels (see Kraxenberger, 2019b). *Fifty Shades of Grey* is emblematic of this trend. The trilogy by EL James (2011, 2012)—later complemented by two further spin-offs (2016, 2017)—sold around 150 million copies and was translated into 52 languages,¹ thus exceeding even the sales figures of Joanne K. Rowling's *Harry Potter* books in terms of paperback editions (Reich, 2015). A vast and active online fan community further testifies to EL James's outstanding popularity (3.5 million followers on Facebook[®] only, and several more million on other social media sites).² The filmic adaptations of the trilogy as well as of its successors have lured millions of viewers around the globe into cinemas and in front of their home TVs. Other contemporary erotic bestsellers that are nearly equally successful include Audrey Carlan's series *Calendar Girl* and *Trinity*, the *After* series by Anna Todd and the *Crossfire* novels by Sylvia Day.

To date, relatively little empirical research has been performed on the readership of these extremely successful recent variants of erotic novels and to the expectations, rewards and communicative practices associated with these novels. In contrast, in the late 1970s and 1980s, several empirical studies were devoted to then popular erotic and romance novels. Data by Coles and Shamp (1984) suggested that erotic novels are used by their primarily female readers as a type of non-threatening, socially acceptable substitute for pornography that serves their sexual stimulation. Lawrence and Herold (1988) saw evidence that erotic novels are mostly read for entertainment, yet may also enter what they call women's "sexual scripts". Young (1979), on the contrary, surveyed a sample of young women and found no link between reading habits and sexual behaviour. Radway (1984/2009) postulated that romantic fiction (including sexually explicit romances) serves women as a means of escaping a drab everyday life and of expressing discontent with and resistance to patriarchal structures while at the same time validating their own place within these structures and increasing its perceived significance. In a similar vein, Modleski (1982/2008) suggested that a lot of mass-generated literature aimed at women plays with the tension between the internalized male gaze, the preoccupation with female innocence, and sublimated feelings of rebellion.

Almost inevitably, these studies were shaped by the specific historical and cultural context in which they were written. In any event, these studies were conducted before the recent wave of erotic novels, which are characterized by a particularly explicit description of sexual acts and practices. It is therefore unlikely that, for instance, Radway's findings regarding popular romances from the 1970s and early 1980s and their midwestern female readers can readily be extended to contemporary variants of the erotic novels and their readership.

In terms of more recent research, a survey study by Deller and Smith (2013) has focused exclusively on readers of *Fifty Shades of Grey*. The study is limited by a fairly small data set ($N = 83$); moreover, analyses do not go beyond percentage descriptions and anecdotal comments from individual participants. Still, the study provides a broader picture of reading motivations, ranging from erotic pleasure and sexual arousal to taking pleasure in the online exchange with other readers of *Fifty Shades of Grey*.

Non-empirical studies on the most recent variants of erotic novels have focused either on the texts themselves (e.g., by comparing EL James's novel with Pauline Réage's *Story of O*, Tsaros, 2013), on the responses of very specific reader communities (e.g., by investigating the responses to *Fifty Shades of Grey* by evangelical Christian and Mormon bloggers, Whitehead, 2013), or on the texts' relationship to wider

cultural debates about sexuality (e.g., by discussing whether notions of sexual transgression can be understood as mechanisms for reinforcing capitalism and heteronormativity, Dymock, 2013; cf. Deller et al., 2013).

Citing the low literary value of the new variant of erotic novels, many discussions in the media have readily dismissed their audience as readers of bad or mediocre taste, without actually investigating the reading motivations and reading experiences of these readers in any detail. Accordingly, the mainstream discourse on literature and reading is reserved for those who prefer 'better' (albeit less read) literature, although the readership of erotic novels has a considerable influence on the international book market. Against this background, the study reported here pursued—without any predetermined anticipations—in a bottom-up fashion "from below"³ two straightforward empirical questions with an exclusive focus on contemporary readership: Who reads erotic novels? And why do these readers enjoy these novels? To this end, we conducted an online survey among avid readers of erotic novels.

To answer the question of 'who', we collected four sets of data from self-declared readers of erotic novels: (1) demographic information, including age, educational level, professional occupation and relationship status; (2) cultural preferences, and specifically reading habits, including tendencies to share and discuss one's reading experiences with others; (3) participants' conceptualizations of erotic novels, including an investigation of the features of erotic novels that participants perceive as important, as well as their opinion regarding this kind of literature; and (4) a variety of personality measures.

To address the question of 'why', we analysed participants' self-reported motivations for reading erotic novels as well as the feelings they associate with reading this kind of literature.

Methods and sample description

Survey. Data were collected in an online survey conducted in German. The survey was administered using the software Unipark (www.unipark.info). All experimental procedures were ethically approved by the Ethics Council of the Max Planck Society and were undertaken with the informed consent of each participant.

Apart from collecting demographic data, the survey comprised a broad range of forced-choice questions and free association tasks.⁴ The unnumbered items were presented with verbal labels arranged diagonally and in ascending order. Items that were not part of validated scales were presented in randomized order.

In a free-association format, participants were asked to list titles of typical erotic novels. The forced-choice questions included German versions of validated psychological scales. Attitudes towards femininity and masculinity were assessed using the Revised BEM Sex Role Inventory (BSRI-R, Troche and Rammsayer, 2011). Participants were asked to respond to 29 statements on a 7-point Likert scale, ranging from 1 (applies almost never/never) to 7 (applies always). We also administered a short German version of the NEO-FFI-30, measuring the five personality dimensions of *neuroticism*, *conscientiousness*, *openness to experience*, *extraversion*, and *agreeableness* (Körner et al., 2008, based on Costa and McCrae, 1992). Responses were given on a 5-point Likert scale, ranging from 1 (disagree strongly) to 5 (agree strongly).

An additional set of forced-choice items targeted participants' reading habits along with their broader cultural interests and habits of art and media consumption. The items were largely obtained by adapting a questionnaire which had previously been used to study viewing stances and experiential response

dimensions of self-motivated consumption of trash films (Sarkhosh and Menninghaus, 2016). Notably, this adaptation was not driven by the assumption that preferences for trash films and for erotic novels are closely related phenomena. Rather, variants of the adapted questionnaire can essentially be used for capturing cultural preferences of any sort. Questions were presented on 5-point scales, and participants were asked to indicate their opinions regarding erotic novels (disagree--agree), what features of erotic novels were important to them (not important at all--important), and the frequency of their exposure to erotic novels (never--very frequently).

Recruitment and selection of participants. Participants were recruited through postings on various social media sites and book blogs with a focus on erotic novels. The underlying rationale was that media and art consumption is typically self-sought, and that self-motivated readers of erotic novels are also more likely to visit blogs or sites specifically targeting such readers (cf. Sarkhosh and Menninghaus, 2016). In addition, we distributed bookmarks that advertised the study in a major bookstore and at a public book presentation. Full legal age was required for participation in the study. Among all participants, 80 book vouchers, worth 20 Euros each, were raffled.

Since our data were collected anonymously, no conclusion can be drawn as to whether individual participants answered our questionnaire on the basis of the digital postings or the bookmarks distributed. Moreover, our data do not allow us to determine to what extent the self-selected participation in our study might have resulted in a representative reading sample. In fact, we did not even aim at a representative sample of readers that might have included readers who were disappointed or even appalled by erotic novels. Rather, we aimed at participants who read erotic novels more or less regularly and actually like this kind of literature. Accordingly, participants with no prior experience in erotic novels, as well as without any liking for them are not included in our sample (for a further discussion of the limitations of our approach, see also Outlook).

Five hundred and fifty-five individuals completed the survey. Since we aimed specifically at readers who like and repeatedly read erotic novels, we excluded data from individuals who indicated entirely different reading preferences. The remaining sample comprised 456 participants, all of whom reported that they read erotic novels. The great majority (94%) of our 456 participants identified as female. Only 5% identified as male, and 1% did not disclose their gender. Due to the very small number of male participants, their respective data yielded unstable correlation matrices. Therefore, we decided to consider only female participants in our analyses, resulting in a final sample of 427 participants.

Statistical analyses. All analyses were conducted in SPSS (IBM SPSS Statistics for Windows, Version 22.0, IBM Corp., 2013).

We used principle component analysis (PCA) for dimensional data reduction (for a similar procedure, including reports of comparisons of averaged means of individual item loadings, see Sarkhosh and Menninghaus, 2016). In all cases, we used oblique rotation (oblimin). The sampling adequacy for all analyses was verified by the Kaiser-Meyer-Olkin measure (all $KMO \geq 0.72$). Bartlett's test of sphericity indicated in all cases that correlations between items were sufficiently large for PCA (all $p \leq 0.001$). Initial analyses were run to obtain eigenvalues for each component in the data. In the following steps, we only considered components with eigenvalues over Kaiser's criterion of 1. In addition, we compared these eigenvalues with randomly created ones obtained from Monte Carlo parallel analyses (Watkins,

2000) and inspected the convergence of the scree plots to justify the selection of the components we retained after the PCA.

Results

The readership of erotic novels

Defining the 'typical' erotic novel from below. For the definition of the term 'erotic novel' we followed a bottom-up approach. This has the advantage that the participants of our study could neither orient themselves towards a definition given by us--a definition that would not necessarily be in accord with the views of non-professional readers--nor were participants asked to select titles from a given list of literary works. Rather, participants were prompted to name titles of books they themselves considered to be typical erotic novels.

Four hundred eighteen of our 427 participants provided titles. A great majority of these participants (81.5%) listed *Fifty Shades of Grey*.⁵ In most cases (65%), *Fifty Shades of Grey* was listed in the first place, followed by the *Crossfire* series by Sylvia Day (3%) and Anna Todd's *After* series (2%). Notably, famous literary examples, such as Nabokov's *Lolita*, were hardly ever mentioned. Rather, the data obtained clearly indicate that our participants associated the label 'erotic novel' primarily, if not exclusively, with contemporary bestsellers.

Demographics. Mean age of our female participants was 33.9 years ($SD = 10.4$, $min = 19$, $max = 77$). Five percent of our female participants were 20 years old or younger, 38% were between 21 and 30 years old. Thirty-five percent of our female participants were between 31 and 40 years old, and 14% were between 41 and 50 years old. The group of participants aged between 51 and 77 years comprises 8.3% of our sample.

Nineteen percent of our participants held a university degree, 33% had obtained a higher education entrance qualification, and 37% a general certificate of secondary education. Nine percent of participants reported the completion of mandatory basic secondary schooling as their highest level of education. Two participants (0.5%) went to special-needs schools, and another 3% did not disclose their level of education. Thus, in total, 52% of our participants had obtained a university degree or a higher education entrance qualification. When considering the data provided by the Federal Statistical Office⁶ for comparison, the data from our participants show an education level slightly above the average level for the German population (university degree: 17%; higher education entrance qualification: 32%; in total: 48%).

Of all participants, 41% were working full time, 23% were working part time, and 13% were homemakers. Sixteen percent of participants were students, 2% were unemployed, and 6% did not report their occupation or job.

Most of our participants (94%) are German native speakers; 3% indicated to have been brought up bilingually with German as one of their native tongues. Of all our participants, 69% reported to read novels only in German. In accordance with the relatively high level of education, 26% reported to read novels in German as well as in English, and 4% of the participants read novels in more than two languages.

Of the 427 participants, 85% identified as heterosexual, 2% as homosexual, and 9% as bisexual; 5% did not report their sexual orientation. Thirty-nine percent of our participants were married, and 28% were in a committed relationship, but unmarried. Twenty-six percent were single, and 4% stated that "it's complicated." Three percent did not disclose their relationship status at all.

Reading habits and exchanges among readers. The majority of our participant sample (80%) described themselves as high-frequent

Table 1 Component loadings for a principle components analysis (PCA) with oblimin rotation of the items describing important features of erotic novels (N = 427).

Item	story world	explicitness	romance fiction	female/male characters
the inner life of the protagonists	0.76			
the description of the world of the protagonists	0.72			
the writing style	0.60			
the suspenseful story	0.58			
a high degree of explicitness/bluntness		0.89		
the erotic passages		0.85		
that there's a happy ending			−0.63	
that there are often several books per row			−0.59	
the love story	0.55		−0.55	
other			0.42	
the female characters				−0.89
the male characters				−0.88
<i>Eigenvalues</i>	3.20	1.66	1.28	1.06
<i>% of variance</i>	26.70	13.80	10.64	8.85

Only loadings > |0.4| are indicated.

readers. Seventy percent of the participants indicated that they are fans of a particular book series, volume or author. On average, participants reported that they read 4.9 novels per month ($SD = 3.40$; $min = 0$; $max = 11$).

Regarding the frequency of exposure to erotic novels throughout the year preceding the survey, 41 (10%) of the 427 participants indicated that they had read erotic novels on a daily basis. One hundred and five participants (25%) reportedly did so several times per week, 32 participants (8%) once a week, 77 participants (18%) two or three times a month, 71 participants (17%) once a month, and 100 participants (23%) less than once a month. To assess participants' preference for erotic novels, we used the frequency of exposure data as a proxy (cf. Sarkhosh and Menninghaus, 2016; for an alignment of genre preference and genre exposure, see also Stern et al., 2018). According to the target group of our survey, the participants showed a high preference for erotic novels ($M = 4.02$; $SD = 0.95$).

The great majority of the participants (85%) reportedly exchange views about their reading of erotic novels with others. Sixty-five percent do so with their friends, 34% share their experience with other fans or interested readers, 27% of participants with their partner, and 6% with other people, such as family members. Moreover, readers who exchange views about reading erotic novels with others preferably do so in direct personal communication ($M = 3.5$, $SD = 1.1$) and via social media platforms ($M = 2.79$; $SD = 1.46$). Blogs and internet fora were used less frequently for this purpose ($M_{\text{Blogs}} = 1.96$; $SD_{\text{Blogs}} = 1.33$; $M_{\text{Fora}} = 1.86$; $SD_{\text{Fora}} = 1.23$).

Conceptualizations of erotic novels

Important features of erotic novels. Participants were asked to indicate how important several features of erotic novels seemed to them (see Table S1, Supplementary Information). The experimenter-selected features were chosen on the basis of the available literature on erotic novels, discussions with experts from the publishing sector, and our own scientific understanding of this literary genre. Participants' data was used to perform a PCA with oblique rotation. The PCA resulted in four components explaining 60% of the variance of the initial item set. Table 1 shows the factor loading after rotation. (All further tables featuring component loadings for principle components analyses likewise show factor loadings after rotation).

The items that cluster on component 1—such as “the inner life of the protagonists”, “the description of the world of the

protagonists”, “the writing style”, “the suspenseful story” and “the love story”—primarily reflect aspects of the *story world* (Comp 1; $M = 4.25$; $SD = 0.53$). Component 2 consists of features related to *explicitness* (e.g., “the erotic passages”, or “a high degree of explicitness/bluntness”; Comp 2; $M = 3.73$; $SD = 0.89$). Component 3 refers to features of erotic novels that can be related to the structure of *romance fiction* (cf. “that there's a happy ending”, “that there are often several books per row”, “the love story”; Comp 3; $M = 2.77$; $SD = 0.69$). Component 4 comprises the features *female and male characters* of erotic novels (Comp 4; $M = 4.01$; $SD = 0.85$). Comparing the averaged means of the individual items loading on the four components, all components show significantly different means (all $F(1,853) \geq 23.30$; all $p \leq 0.001$; all $\eta^2 \geq 0.03$). The component *story world* has the highest mean value, followed by the component *female/male characters* (see Fig. 1).

Opinions about erotic novels. Based on participants' ratings regarding their opinions about erotic novels (see Table S2, Supplementary Information), we performed a further PCA with oblique rotation. The four components obtained explain 49% of the variance of the initial item set. Table 2 shows the factor loadings.

The items that cluster on component 1—such as “hot”, “exciting” and “good”—can be interpreted to reflect the view that reading erotic novels provides *positive excitement* (Comp 1; $M = 3.12$; $SD = 0.24$). Component 2 bears on transgressive properties of the novels regarding *violations of moral boundaries and taboos* (cf. “coarse”, “obscene”, “perverse”; $M = 2.01$; $SD = 0.65$). Component 3 refers to a conceptualization of erotic novels as having a rather *low quality* (cf. “easy to read”, “kitschy”, “commercial”, “banal”, “cheap”, and “badly written”; $M = 2.58$; $SD = 0.55$). Component 4 comprises items that can be summarized as *progressive values* (cf. “emancipated”, “feminist”, “progressive”; $M = 2.88$; $SD = 0.59$). Comparing the averaged means of the individual items loading on the four components, the component *positive excitement* shows the highest mean value (see Fig. 2), followed by *progressive values*. All components differ significantly from each other (all $F(1,853) \geq 59.0730$; all $p \leq 0.001$; all $\eta^2 \geq 0.07$).

Cultural preferences. Participants were further asked to indicate their cultural preferences, with a special focus on literature (see Table S3, Supplementary Information). Performing a PCA with oblique rotation on the 32 variables resulted in seven components

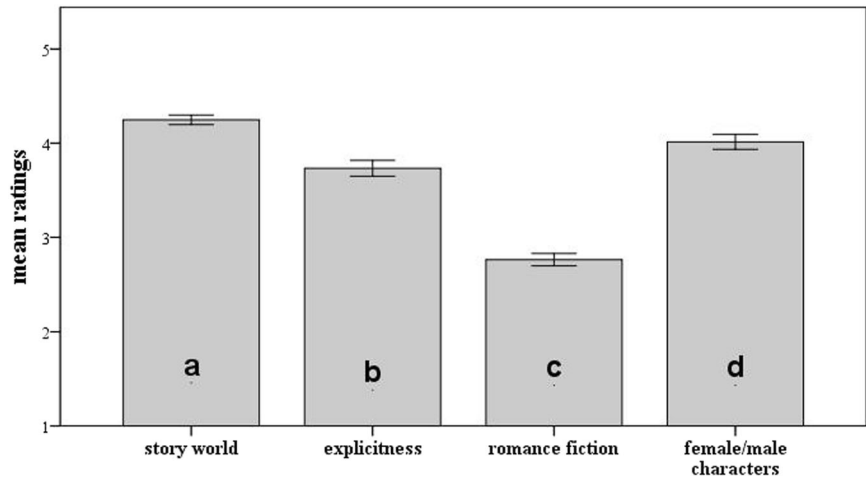


Fig. 1 Mean ratings for each of the four components reflecting important features of erotic novels. Error bars indicate the standard error of the mean. Means with different letters are significantly different.

Table 2 Component loadings for a principle components analysis (PCA) with oblimin rotation of the items describing participants' predominant opinion on erotic novels (N = 427).				
Item	positive excitement	violations of moral borders and taboos	low quality of writing	progressive values
hot	0.79			
exciting	0.78			
good	0.78			
sexy	0.77			
interesting	0.77			
erotic	0.76			
boring	−0.75			
bad	−0.73			
suspenseful	0.72			
arousing	0.69			
worthless	−0.69	0.41		
badly written	−0.68		0.41	
cheap	−0.67	0.45	0.42	
imaginative	0.66			
entertaining	0.65			
banal	−0.64	4.6	0.46	
romantic	0.57			
cool/chilly	−0.53	0.48		
informative	0.45		−0.41	0.41
coarse		0.78		
obscene		0.76		
perverse		0.70		
sexist		0.69		
trashy	−0.50	0.58		
conservative		0.46		
easy to read			0.51	
kitschy	−0.42		0.48	
commercial			0.45	
blunt				
emancipated				0.67
feminist				0.63
progressive				0.62
innovative	0.43			0.48
other				
Eigenvalues	10.86	2.81	1.71	1.43
% of variance	31.95	8.26	5.01	4.21

Only loadings > |0.4| are indicated.

explaining 52% of the variance of the initial item set. Table 3 shows the factor loading after rotation.

The seven components can be interpreted as preferences for the *classical high arts* (Comp 1; $M = 2.37$; $SD = 0.65$), *blockbuster/TV* (Comp 2; $M = 3.53$; $SD = 0.71$), *thrillers* (Comp 3; $M = 2.51$;

$SD = 1.06$), *popular fiction* (Comp 4; $M = 2.11$; $SD = 0.88$), *erotic romance and serial literature* (Comp 5; $M = 4.05$; $SD = 0.74$), media content devoted to *culture and special interest* (Comp 6; $M = 2.40$; $SD = 0.83$), and *porn movies* (Comp 7; $M = 1.44$; $SD = 1.14$; for detailed information on the items that load on the respective components, see Table 3).⁷

The component *erotic romance and serial literature* (Comp 5, $M = 4.05$; $SD = 0.74$) emerged as the component with the highest mean; it includes the items “erotic novels”, “romance novels”, and “series of novels” (see Fig. 3). The component *blockbusters/TV* shows the second-largest mean value. All components differ significantly from each other (all $F(1,853) \geq 5.47$; all $p \leq 0.02$; all $\eta^2 \geq 0.01$), with the exceptions of Components 1 and 6 ($F(1,853) \geq 0.40$; all $p = 0.53$; $\eta^2 = 0.00$) as well as of Components 3 and 6 ($F(1,853) \geq 2.79$; all $p = 0.10$; $\eta^2 = 0.003$).

Personality measures

BSRI-R. We used the revised BEM Sex Role Inventory to assess participants’ scores on the femininity scale (F-scale; $\alpha = 0.85$; $M = 5.07$; $SD = 0.76$) and the masculinity scale (M-scale; $\alpha = 0.89$; $M = 4.09$; $SD = 0.92$).

In a next step, we compared the mean values and standard deviations from the answers of our participants with the values reported in Troche and Rammsayer (2011). Results show no significant differences between the two participant samples (all $t \leq 1.58$; all $p \geq 0.11$).

NEO-FFI-30. Based on the German NEO-FFI-30 questionnaire (Körner et al., 2008), we obtained ratings on the scales for *neuroticism* ($\alpha = 0.89$; $M = 1.81$; $SD = 0.96$), *extraversion* ($\alpha = 0.77$; $M = 2.18$; $SD = 0.67$), *openness to experience* ($\alpha = 0.78$; $M = 2.20$; $SD = 0.80$), *agreeableness* ($\alpha = 0.74$; $M = 2.82$; $SD = 0.68$), and *conscientiousness* ($\alpha = 0.80$; $M = 3.00$; $SD = 0.64$).⁸ Given the unbalanced age distribution in our data, we conflated all data across potential age groups.

We compared the data of our participants with those that had been reported for a population-representative quota sample (Borkenau and Ostendorf, 2008). Unpaired t-tests showed that our female participant sample differs significantly from the representative female quota sample on four of the five dimensions (for all details of the comparison, see Table 4). Specifically, the participants from our questionnaire study show significantly lower values for *extraversion* and *openness to experiences*, and significantly higher means for *agreeableness* and *conscientiousness*.

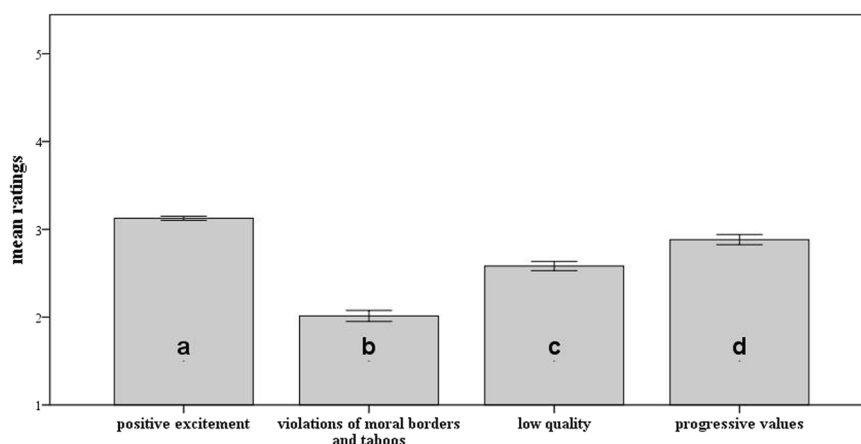


Fig. 2 Mean ratings for each of the four components reflecting participants' opinions about erotic novels. Error bars indicate the standard error of the mean. Means with different letters are significantly different.

Table 3 Component loadings for a principle components analysis (PCA) with oblimin rotation of the items describing participants' cultural preferences and practices, including reading ($N = 427$).

Item	classical high arts	blockbuster/ TV	thrillers	popular fiction	erotic romance and serial literature	culture/special interest	porn movies
museums	0.76						
theatre	0.76						
opera	0.71						
classical music	0.70						
classic literature	0.64						
poetry	0.56						
historic novels	0.50					0.45	
contemporary literature	0.50						
commercial TV	-0.49						
blockbuster movies		0.73					
TV series		0.70					
streaming services		0.63					
cinema		0.0					
popular music		0.42					
quality films							
literary thrillers			-0.90				
crime novels			-0.82				
horror stories			-0.75				
literary fantasy				-0.76			
literary science fiction				-0.76			
comics/manga				-0.68			
fanfiction				-0.60			
romance novels					0.78		
series of novels					0.69		
erotic novels					0.66		
public broadcasting TV						0.73	
culture/special-interest TV channels	0.43					0.69	
literary nonfiction	0.50					0.50	
literary comedies							
porn movies (payed content)							0.70
porn movies (online)							0.68
other							
<i>Eigenvalues</i>	5.43	2.85	2.01	1.92	1.75	1.38	1.38
<i>% of variance</i>	16.97	8.91	6.29	6.01	5.47	4.31	4.30

Only loadings > |0.4| are indicated.

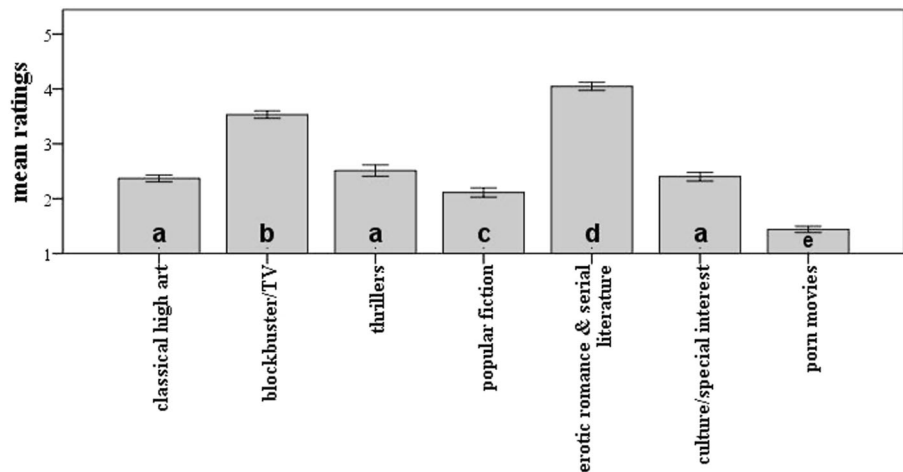


Fig. 3 Mean ratings for each of the seven components reflecting participants’ cultural preferences and practices. Error bars indicate the standard error of the mean. Means with different letters are significantly different.

Table 4 Ratings on the NEO-FFI-30; Comparisons of own data (Survey Data) with representative sample (Borkenau and Ostendorf, 2008).					
	Survey Data N = 427 M (SD)	Borkenau and Ostendorf (2008) N = 448 M (SD)	t	df	p
extraversion	26.16 (8.01)	27.41 (6.52)	2.54	873	0.01
openness to experiences	26.36 (9.70)	29.71 (6.54)	6.01	873	≤0.001
agreeableness	33.81 (8.15)	31.68 (5.15)	4.64	873	≤0.001
conscientiousness	36.15 (7.70)	33.08 (5.90)	6.64	873	≤0.001
neuroticism	21.77 (11.94)	22.22 (7.97)	0.68	873	0.5

Since the data reported in Borkenau and Ostendorf (2008) was derived from a 5*12-item version of the NEO-FFI (and not from a 30-item version with 5*6 items, as it was the case with our study), we multiplied our means and standard deviations by two.

Regarding *neuroticism*, the data show no significant differences between the two samples.

Reasons for reading erotic novels. In a next step, we explored participants’ reasons for reading erotic novels. Specifically, we assessed, on the one hand, participants’ sought-after rewards when reading erotic novels, i.e., their reading motivations. On the other hand, we also wanted to know more about the actually experienced rewards, i.e. the feelings they associated with reading this kind of literature.

Motivations for reading erotic novels. The PCA regarding participants’ motivations for reading erotic novels (see Table S4, Supplementary Information) showed three components explaining 58% of the variance (see Table 5).

Component 1 can be interpreted as reflecting the motivation of seeking *guidance*; items with particular high loadings on this component were “to get to know new sex practices”, “to get tips for my own relationship”, and “for my sexual stimulation”. Component 2 captures the reward of *distraction*, including items such as “to distract myself”, “to relax”, and also—but to a lesser degree—the item “to watch less TV”. Component 3 reflects the reward of *having a say*, including items such as “to be able to join the conversation/to have a say”, “because there are certain books you have to have read”, but also “to watch less TV”. Overall, the component *distraction* (Comp 2, $M = 3.52$; $SD = 0.88$) shows a significantly higher mean value than the items loading on *having a say* (Comp 3; $M = 2.87$; $SD = 0.91$) and those loading on the component *guidance* (Comp 1; $M = 2.67$; $SD = 0.95$; see Fig. 4).

The three components’ mean values differ significantly from each other (all $F(1,853) \geq 10.03$; all $p \leq 0.002$; all $\eta^2 \geq 0.01$).

Feelings associated with reading erotic novels. The PCA regarding feelings associated with reading erotic novels yielded three components which explain 45% of the variance of the initial item set (see Table S5; Supplementary Information; for factor loadings, see Table 6).

Including items such as “fascinated”, “enthusiastic” and “carried away”, component 1 can be interpreted as reflecting feelings of *captivation* (Comp. 1, $M = 3.51$; $SD = 0.57$). Component 2 captures feelings of *embarrassment* (e.g., feeling “embarrassed”, “embarrassed on behalf of someone else” and “disgusted”; Comp. 2, $M = 1.61$; $SD = 0.49$). Component 3 can be summarized as reflecting feelings of *ease* (including items capturing feeling “laid-back”, “unconstrained” and “amused”; see Table 4). This component shows the highest averaged mean of all feeling components (Comp. 3, $M = 3.83$; $SD = 0.61$), followed by the component *captivation* (see Fig. 5). All components differ significantly from each other (all $F(1,853) \geq 62.10$; all $p \leq 0.001$; all $\eta^2 \geq 0.07$).

Discussion

Our study pursued an exploratory bottom-up approach towards identifying the readership of erotic novels as well as the motivations driving their reading and the gratifications obtained from it. A multi-faceted picture emerges, which sometimes draws on aspects of both our research questions—who reads erotic novels, and why—and does not always allow for a clear subdivision of the

individual results. While some of our findings confirm the assumptions and predictions of previous theoretical work, other results allow for new insights and interpretations.

EL James's *Fifty Shades of Grey* was mentioned most frequently as a typical erotic novel. This preeminence is in line with the view that James's story about the unexperienced Ana and her rich lover Christian Grey with his dark past and desires can be considered a prototype of the contemporary erotic novel. This prototype might not only have been an inspirational source for other authors, but has also contributed to the recent social acceptance of erotic fiction (Kraxenberger, 2019b).

The two other most frequently listed titles--the *Crossfire* series by Sylvia Day, and Anna Todd's *After* series--can be seen as supporting this assumption, as both replicate EL James's best-selling formula of a sex-, crime- and trauma-enriched Cinderella story (cf. Deller and Smith, 2013). *Fifty Shades of Grey* is a prime example of popular texts that are influenced by digitalization (for a description of digitally influenced aspects of the trilogy including its origin in the online phenomenon of fan fiction, see Kraxenberger, 2019a). Accordingly, in the survey by Deller and

Smith (2013), 23% of respondents reported that they had heard about the *Fifty Shades of Grey* novels for the first time via Facebook; 21% of the study participants had heard about the books via TV, newspaper and radio, 10% via Twitter, and 9% via other websites or platforms.

Table 5 Component loadings for a principle components analysis (PCA) with oblimin rotation of the items describing participants' motivations for reading erotic novels (N = 427).

Item	guidance	distraction	having a say
to get to know new sex practices	0.87		
to get tips for my own relationship	0.83		
for my sexual stimulation	0.68		
to get to know other forms of relationships without having to try them myself	0.63		-0.40
to distract myself		0.78	
to relax		0.78	
to watch less TV		0.56	-0.49
other			
because there are certain books you have to have read			-0.79
to be able to join the conversation/ to have a say			-0.79
Eigenvalues	2.85	1.51	1.42
% of variance	28.45	15.11	14.24

Only loadings > |0.4| are indicated.

Table 6 Component loadings for a principle components analysis (PCA) with oblimin rotation of the items describing the feelings participants associate with reading erotic novels (N = 427).

Item	captivation	embarrassment	ease
fascinated	0.80		
enthusiastic	0.79		
carried away	0.79		
interested	0.75		
pleased	0.74		
content	0.71		
curious	0.70		
moved	0.69		
intellectually animated	0.68		
deeply moved	0.66		
bored	-0.64	0.40	
happy	0.60		0.57
aroused	0.59		
surprised	0.55		
female	0.51		
part of a community	0.50		
embarrassed		0.69	
embarrassed on behalf of someone else		0.68	
disgusted		0.65	
to be repelled by		0.63	
shocked		0.60	
guilty		0.59	
furious		0.56	
anxious		0.54	
sad			
male			
laid-back	0.43		0.70
unconstrained	0.43		0.70
amused			0.69
other			
Eigenvalues	8.75	3.36	1.51
% of variance	29.18	11.19	5.03

Only loadings > |0.4| are indicated.

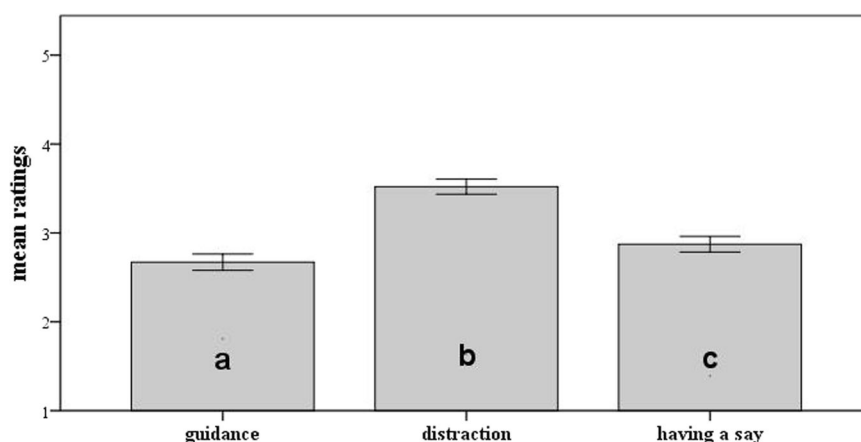


Fig. 4 Mean ratings for each of the three components reflecting participants' motivations for reading erotic novels. Error bars indicate the standard error of the mean. Means with different letters are significantly different.

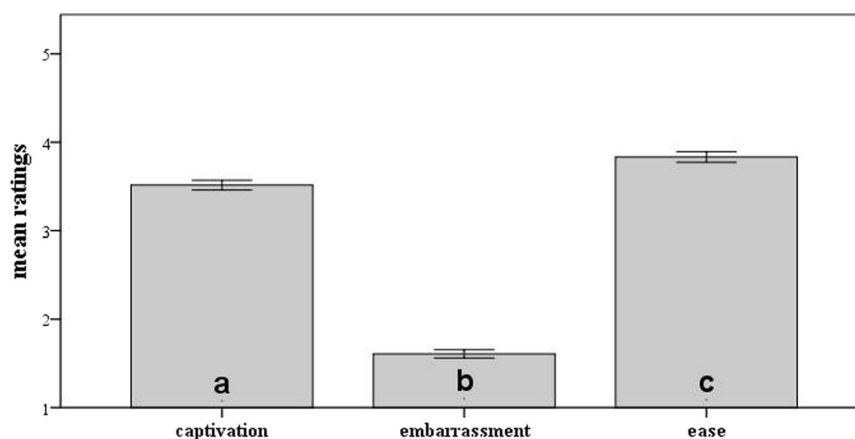


Fig. 5 Mean ratings for each of the three components reflecting the feelings participants associate with reading erotic novels. Error bars indicate the standard error of the mean. Means with different letters are significantly different.

These findings underline the veritable hype about the trilogy and its viral spread, in particular on social media channels. However, they also highlight a limitation of our own data sampling, in particular with regard to the educational level of our participants. After all, in order to possibly become participants of our study, they had to have the economic means and the educational background to competently use digital technologies and to navigate social media.

The finding that readers of erotic novels are mostly women (Bollmann, 2013; Hogan, 1994; Illouz, 2013; Kraxenberger, 2019a) who usually live in committed (heterosexual) relationships confirms earlier research (e.g., Radway, 1984/2009). In line with uses-and-gratifications theory (e.g. Katz et al., 1974), Illouz (2013) has argued on theoretical grounds that heterosexual women in stable relationships read erotic novels about heterosexual couples to get advice and inspiration on how to live up to the expectations which our society tends to harbour regarding never-ending romantic love and sexual desire in committed relationships (Illouz, 2013). However, this observation may not go far enough. For one, it disregards the phenomenon that heterosexual women are also a standard audience for same-sex erotic novels featuring only male protagonists (e.g., Busse and Lothian, 2017; Foster, 2015). Moreover, although our empirical analysis confirms such a *guidance* component, two other motivational components turned out to be significantly more prominent. Specifically, aspects related to *distraction* are the most important motivation for our participants to read erotic novels (see below). This finding is also in line with previous research that has emphasized a temporary escape from everyday life as an important reading motivation (Coles and Shamp, 1984; Radway, 1984/2009).

The above-average education level of our participants—who are mostly professionals rather than homemakers and quite often read novels not only in their mother tongue—is also quite expectable: To become an avid reader—and particularly so in a foreign language—requires first and foremost a solid reading and language competence, socialization that allows for developing an appreciation of reading, as well as a certain degree of ambition. Sarkhosh and Menninghaus (2016) suggest that the comparable, above-average level of education of trash film fans who participated in their study implies an ironic viewing stance of highly educated cultural “omnivores” (Peterson, 2005), which allows them to transgress normative limits of class and taste as stipulated, for example, by Bourdieu (1984). In a similar vein, our assessment of cultural preferences shows that our above-average educated participants reported a broad range of cultural interests. While they particularly appreciate *erotic romance and serial*

literature, including erotic novels, followed by a preference for *blockbusters* and *TV*, their cultural interests also include dimensions as diverse as *thrillers*, *classical high arts*, and aspects of *culture/special interest*. At the same time, and in contrast to the above-reported findings for highly educated trash film-fans, we obtained no indications for (self-)ironic dimensions of the liking for erotic novels.

In addition to the broad cultural interest, the very high number of books read per month indicated by our participants is remarkable. This high consumption rate may have its cause in the texts themselves: like other popular literature, such as schematic women’s novels or crime thrillers, or many TV series, *Fifty Shades of Grey* and many of its literary descendants are inherently characterized by the feature of seriality (Kraxenberger, 2019a). In general, seriality appears to support a repetition of previous self-rewarding experiences, and hence the consumption of entire series of novels rather than individual books. This might also help to explain the unusually high number of participants who describe themselves as high-frequent readers.

The great majority of our participants reportedly communicate with others about their reading of erotic novels (see also Deller and Smith, 2013). This finding is in line with the relatively low mean values of feelings of *embarrassment* that participants associate with reading erotic novels. The most commonly used form of exchange seems to be talking in person or communicating digitally via social media in one-on-one settings. According to Cordon-García et al. (2013), such sharing of one’s reading impressions within an active, connected (fan) community might lead to a more social, participative, and hence broader reading experience.

Regarding their conceptualization of erotic novels, participants rated aspects related to the component *story world* (including items such as “the inner life of the protagonists”, “the suspenseful story” and “the love story”) as most important, followed by the *female and male characters* of erotic novels. Similar to the depiction of relationships in schematic romances (see Nutz, 1999; Zimmermann, 1982), the personal and somewhat heroic life trajectories of the protagonists seem to be crucial for erotic novels, as many of them combine elements of highly emotional forms of fiction, such as (schematic) romances, with elements of thrillers and crime novels (Kraxenberger, 2019b).

Our analyses further revealed participants’ opinion that reading erotic novels provides *positive excitement*, i.e., they consider this kind of literature as “hot”, “exciting” and “good”. Although this component also includes the item “entertaining”, this quality seems to be of lesser importance for the conceptualization of

reading erotic novels than suggested by Lawrence and Herold (1988).

Interestingly, our results show the second-largest mean values for the component *progressive values*. Hence our participants consider erotic novels—at least to a certain degree—also as emancipated, feminist, and progressive. These attributions are difficult to reconcile with two fairly consistent aspects of these novels' plots. First, these plots often promote the image of a perpetually young and beautiful woman, who, despite her talents or professional success, strongly depends on male recognition and confirmation. Second, preferred male lovers tend to be of higher socioeconomic status as well as sexually more experienced than the women, thus perpetuating the asymmetry between the two sexes.

One possible interpretation of the attribution of *progressive values* such as “emancipatory” or “feminist” to the novels under scrutiny maybe that they reduce the gender gap in the availability of sexually explicit and potentially stimulant materials tailored to the demands of women and men, respectively. After all, prior to the advent of this new type of erotic novels primarily directed at a female readership, male audiences had far more choices of sexually explicit materials. In this sense, contemporary erotic novels such as *Fifty Shades of Grey* may be conceived as marking a step towards equal opportunities for both sexes.

This explanation would be well in line with our findings regarding reading motivation for erotic novels and the aforementioned *guidance* component, including items such as “to get to know new sex practices” and “for my sexual stimulation”. However, since the *guidance* component shows comparatively low mean values, it can only partly explain participants' conceptualization of contemporary erotic novels as ‘progressive’. The positively valued *explicitness* of the novels might be another factor that contributes to the attribution of *progressive values*; however, the *explicitness* component, too, is altogether only of weaker importance, limiting its potential explanatory value for the attribution of *progressive values*.

Another explanation of why our participants do not perceive erotic novels as reactionary or unprogressive might lie in their attitude towards gender roles. According to our assessment of the revised BEM Sex Role Inventory, the sample of our female participants appears to be in full accord with the conventional gender concepts reported for the reference sample. Accordingly, they do not tend to reflect critically on gender stereotypes and patriarchal representations of women, or they simply do not mind such representations because of their own understanding of gender roles and their identification with these concepts. In this vein, readers that can identify with conventional concepts of femininity might well search for and experience a confirmation of these concepts in reading the erotic novels under scrutiny.

Perhaps even more important for a ‘progressive’ interpretation by their female readers, the novels often portray a pseudo-superiority of the female characters in terms of emotional stability, which they use to mould their male counterparts from merely sexual into affectively intelligent partners (while still being submissive to unyielding patriarchal structures). This would suggest that not much has changed since Radway's (1984) study, which observed that compliance with patriarchal structures was often simultaneously perceived as a way of overcoming or escaping them (see also Modleski, 1982/2008).

However, this conformity to traditional gender roles also has pronounced limitations. For instance, the highly popular *Fifty Shades of Grey* trilogy romanticizes a sexual relationship that can also well be defined as straight-up domestic abuse, defying both progressive values and conventional gender roles. The apparent acceptance of this relationship by the readers who participated in our survey may indicate that they perceive the violence in *Fifty*

Shades of Grey as an exciting sexual practice rather than as abuse. Accordingly, the female character can be perceived as admirably daring and curious and not as self-effacingly submissive and ruled by the violent whims of her lover. Such an interpretation of the abuse scenario and the readers' apparent desire for representations of submission (cf. Coles and Shamp, 1984) is likely to be enhanced by a firmly established “protective frame” (Apter, 1982, 1992). This psychological construct refers to a top-down activation of the cognitive awareness that the presented relationship is fictional and involves no harm to real persons. Moreover, the general acceptance of these novels as part of mainstream culture implies the understanding that these novels do not carry any social or emotional stigma for the reader (for similar results with erotic and romance novels, see Coles and Shamp, 1984; Lawrence and Herold, 1988).

Regarding our exploratory investigation of the ratings of our participants on the NEO-FFI-30, we found our participants' scores to be lower on *extraversion* and *openness to experiences*, but higher on *agreeableness* and *conscientiousness* when compared to a representative sample. These findings point towards a variety of attributes by which the readership of erotic novels might be characterized:

Following the interpretation by Borkenau and Ostendorf (2008), the relatively low mean values on the dimension of *extraversion* can be understood as indicating a fairly reserved and rather introverted personality.

The low scores on *openness to experiences* can be interpreted in light of recent research according to which high scores on *openness to experiences* predict higher tolerance, liking and interest for complex and cognitively challenging stimuli (Fayn et al., 2017; cf. also Gocłowska et al., 2017). The low *openness*-scores obtained for avid readers of contemporary erotic novels are thus in good accord with portraying these novels, as well as romances and other serial forms of literature, as highly schematic and easy to comprehend (see e.g., Kraxenberger, 2019b; Nutz, 1999; Thiel, 1991; Zimmermann, 1982).

Further, a recent study that presents a screening tool for the assessment of individual differences in responsiveness to art (Aesthetic Responsiveness Assessment (AReA), Schlotz et al., 2020) shows that higher than average levels of the *openness* trait are distinctly predictive of higher “aesthetic responsiveness.” In contrast, the traits on which the participants of our study scored particularly high (i.e., *conscientiousness*, *agreeableness*, see below) are far less associated with aesthetic responsiveness. This suggests that reading motivation and reading rewards underlying the preference for contemporary erotic novels have less to do with the trait of genuinely aesthetic responsiveness, which is predictive of intense art experiences of a more classical and less schematic type.

Regarding the dimension of *agreeableness*, recent research has reported links between *agreeableness* and cooperative and altruistic tendencies (Zhao and Smillie, 2015) as well as empathy (Mooradian et al., 2011). Our readers' high scores on the dimension of *agreeableness*, along with their ways of sharing their reading experiences with others, suggest that they have a pronounced interest in communicative relations; also, they might identify more easily with protagonists of erotic novels. High scores on *agreeableness* might also suggest a need for harmony. Accordingly, erotic novels could be particularly well-suited for readers who appreciate the genre-typical presentation of a disharmonious, but foreseeable event within a clear, predictable narrative scheme (for the theoretical assumption that readers of erotic literature exhibit a special liking for features of schematic love stories, see Archer and Jockers, 2017). This interpretation allows for a link between participants' low *openness to experiences*-scores and their high *agreeableness*-scores.

Finally, we interpret our participants' relatively high scores on the dimension of *conscientiousness* as indicating a rather persistent reader personality with ambitious tendencies (Borkenau and Ostendorf, 2008). These characteristics are reflected, for example, in serial reading and the high reading frequency of our participants.

With regard to the question of why people read erotic novels, our analyses show that aspects related to *distraction* are our participants' most important motivation, followed by the component *having a say*. The latter component aligns with the finding that our participants like to share their reading experiences with others (for similar results, see Deller and Smith, 2013; for a discussion of the functions of active participation in popular culture, cf. Lüdeke, 2011). It further conforms with the finding that readers tend to experience erotic novels in general, and *Fifty Shades of Grey* in particular, as an opportunity to engage in a public debate about female sexuality (Deller and Smith, 2013).

The lesser importance of features related to *explicitness* and to seeking *guidance* as a motivation for reading erotic novels challenges widely held conceptions of contemporary erotic novels. Previous research had already shown that erotic material does not, for example, influence (long-term) sexual behaviour (Young, 1979). Still, *Fifty Shades of Grey* has often been classified as "mommy porn" (see for instance Bosmann, 2012) and, consequently, as literary pornography specifically addressing a female readership (for a distinction between pornographic and erotic literature, see Heinzus, 1995). The more adequate label 'erotic novel' interlinks explicit sexual content with a focus on the developmental trajectory of the protagonists (for correspondences to schematic romances, see e.g., Nutz, 1999; Thiel, 1991; Zimmermann, 1982). As our data on motivations for reading erotic novels shows, contemporary erotic novels, including *Fifty Shades of Grey* by E.L. James, Sylvia Day's *Crossfire* novels, or Anna Todd's *After*-series, are apparently read 'with two hands' and cannot be reduced to their explicit sexual content. At the same time and contrary to earlier variants of romances, explicit depictions of sexuality appear frequently and are vital and indispensable for the plotline (see Archer and Jockers, 2017; Deller and Smith, 2013).

Among the rewards that are reportedly experienced when reading erotic novels, feelings of *ease*, i.e., feeling "unconstrained" and "amused" stand out as the strongest factor. Theoretically, such feelings of pleasurable ease could result from a reading experience leading to a final catharsis as suggested by Dymock (2013). However, the overall picture of our results rather suggests that the *ease* component identified in our study bears on the entire trajectory of the act of reading itself (see Radway, 1984/2009, regarding the significance of reading romance and erotic literature). In this sense, the reward reported by our participants can be interpreted to be well in line with the hypothesis that ease experienced during processing is a major factor that predicts the enjoyment and the liking of all sorts of phenomena, with the levels of optimal ease differing both between persons and with regard to stimulus characteristics (Reber et al., 2004).

Outlook

As mentioned before, the results of our study are biased by our sampling method that primarily aimed at surveying avid readers of erotic novels online and resulted in an almost exclusively female sample of participants with a preference for contemporary bestselling novels that are discussed on social media. Findings obtained for this sample cannot be generalized to a larger public and are limited with regard to the comparisons with other data samples. Moreover, the data presented here were not collected with the purpose of documenting in a representative study for the

entirety of the German audience the attitude towards and the experiences with erotic novels. Collecting data from readers that are not familiar with or even dislike erotic novels would have made little sense when aiming at a better understanding of erotic novels and their specific readership (cf. Sarkhosh and Menninghaus, 2016). It should also be noted that due to the strong focus of our participants on novels of the *Fifty Shades of Grey* type, the results of our study ultimately also leave open whether or not we can expect similar reader and reward profiles for readers of other variants of erotic novels. Moreover, we cannot rule out that there is an avid readership of erotic novels that simply is not responsive to calls for online surveys, and that precisely these readers may have named different, possibly more 'literary', titles than our participants did.

Another limitation of our study lies in its focus on participants from a specific culture with distinct values and norms. Therefore, future studies drawing on a representative participant pool are called for that include larger samples of male participants as well as different language communities. Also, such future undertakings might address and compare a variety of reading preferences, thus allowing for more fine-grained analyses of the (inter-)relations and interactions between personality features and literary preferences. In addition, future research may also consider the role marketing strategies of publishing houses have in the promotion of successful erotic books. This includes both the editing process through a publisher and the strategic focus on specific target groups within the broader readership. Note, however, that *Fifty Shades of Grey* in particular was able to win a considerable fan community already before it was picked up by a publishing house. Therefore, business-oriented production and marketing are more likely to play a role with regard to James's successors and are clearly not the only contributing factor.

These limitations notwithstanding, our study is the first to provide a clear picture of a large group of readers of erotic novels and of the reasons why they actually enjoy reading them. Most previous research has disregarded the fact that the readers of novels such as *Fifty Shades of Grey* represent a rather interesting phenomenon on the book market: at a time when the cultural technique of reading is often claimed to be declining (Wolf, 2007), they read, in large numbers, erotic novels. Thus, ironically, just the readers who are often implicitly belittled for enjoying rather vacuous and tasteless entertainment are among those who effectively counter the much-deplored disappearance of the cultural practice of reading. In fact, our participants report very high reading frequencies, which speaks against the often-conjured end of the book (in a similar vein, see Lauer, 2018). At the same time, their type of reading obviously differs from that of traditional intellectuals. Instead of applying herself to demanding reading, this type of reader—even though highly educated—enjoys simple, entertaining page turners to distract herself and to relax.

There is nothing wrong per se with such an attitude towards literature. However, given the prominent depiction of female submission and abuse, contemporary erotic novels do entail some problematic aspects, all the more so, as our female readers apparently lack a critical reflection regarding the role of women in this new type of erotic novels. Given reports of a correlation between the consumption of fiction and unrealistic relationship expectations, including sexual perfectionism (Shapiro and Kroeger, 1991), we call for further investigations regarding the acceptance of the representation of women in contemporary erotic novels.

From a cultural perspective, our study stresses the significance of analysing current reading practices as they provide a basis for a better understanding of the coevolution of literature, readership, and the book market. Over the past decade, erotic novels of the type investigated in this article have become a major player in this

field. The extent to which their great success interacted, if at all, with other segments of literature and the book market, calls for further investigations beyond the scope of the literary canon.

Data availability

The datasets generated during and/or analysed during the current study are not publicly available since they include personal data from our participants but are available from the corresponding author on reasonable request.

Received: 26 June 2020; Accepted: 24 February 2021;

Published online: 28 April 2021

Notes

- 1 See Random House: "EL James," retrieved from <https://www.randomhouse.de/Autor/E-L-James/p489056.rhd>.
- 2 Retrieved June 2020. Another phenomenon that deserves to be mentioned are the anti-fan campaigns that developed simultaneously. One example is the campaign "50 shades is abuse" on Twitter by Natalie Collins and Emma Tofi that aims at raising awareness of the romanticized domestic abuse in EL James's books.
- 3 This approach is common in psychology and very well established in the tradition of empirical aesthetics. T.G. Fechner, the founding figure of the latter field of research, already referred to this approach as early as 1876: The "path from below provides [...] immediate and clear orientation not only in the field of the terms [...], but also about the reasons [...] in the individual and her neighbour" (Fechner, 1876, p. 2, our translation).
- 4 Given the hypotheses and research questions on which we focus in this study, some items from the questionnaire were not considered in the analyses presented here.
- 5 Usually, participants did not specify whether they referred to the trilogy, certain books or whether they would include the two spin-offs under this notion. Therefore, as well as due to the fact that many participants named collective terms like whole series or "all books" of a certain author, we refrained from calculating, e.g. frequencies ranks.
- 6 <https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/BildungForschungKultur/Bildungsstand/Tabellen/Bildungsabschluss.html>.
- 7 The following items showed the highest loadings on the respective components. Component 1 (*classical high arts*): "museums and exhibitions", "theatre", "opera" Component 2 (*blockbuster/TV*): "blockbuster movies", "TV series", "streaming service" Component 3 (*thrillers*): "literary thriller", "crime novels", "horror stories" Component 4 (*popular fiction*): "literary fantasy", "literary science fiction", "comics/manga" Component 5 (*erotic romances and serial literature*): "romance novels", "series of novels", "erotic novels" Component 6 (*culture/special interest*): "public broadcasting TV", "culture/special-interest TV channels", "literary nonfiction" Component 7 (*porn movies*): "porn movies (paid content)", "porn movies (online)"
- 8 Alpha and mean values given here refer to averaged (index) values per dimension/scale.

References

- Apter MJ (1982) The experience of motivation: the theory of psychological reversals. Academic Press, London
- Apter MJ (1992) The dangerous edge. The psychology of excitement. The Free Press, New York
- Archer J, Jockers ML (2017) Der Bestseller Code: Was uns ein bahnbrechender Algorithmus über Bücher, Storys und das Lesen verrät. Plassen, Kulmbach
- Bollmann S (2013) Frauen und Bücher: Eine Leidenschaft mit Folgen. DVA, München
- Borkenau P, Ostendorf F (2008) NEO-FFI: NEO-Fünf-Faktoren-Inventar nach Costa und McCrae, Manual
- Bosmann J (2012) Discreetly digital, erotic novel sets American women abuzz. N Y Times <https://www.cnbc.com/id/46691077>
- Bourdieu P (1984) Distinction: a social critique of the judgement of taste (trans: Nice R). Harvard University Press, Cambridge
- Busse K, Lothian A (2017) A history of slash sexualities. Debating queer sex, gay politics and media fan cultures. In: Smith C, Attwood F, McNair B ed. The Routledge companion to media, sex and sexuality. Routledge, London
- Coles CD, Shamp MJ (1984) Some sexual, personality, and demographic characteristics of women readers of erotic romances. Arch Sexual Behav 13(3):187–209
- Cordón-García JA, Alonso-Arévalo J, Gómez-Díaz R, Linder D (2013) Social reading: platforms, applications, clouds and tags. Elsevier, Amsterdam
- Costa PT, McCrae RR (1992) Normal personality assessment in clinical practice: the NEO Personality Inventory. Psychol Assess 4(1):5
- Deller RA, Harman S, Jones B (2013) Introduction to the special issue: reading the Fifty Shades 'phenomenon'. Sexualities 16(8):859–863
- Deller RA, Smith C (2013) Reading the BDSM romance: reader responses to Fifty Shades. Sexualities 16(8):932–950
- Dymock A (2013) Flogging sexual transgression: interrogating the costs of the 'Fifty Shades effect'. Sexualities 16(8):880–89
- Fayn K, Silvia PJ, MacCann C, Tiliopoulos N (2017) Interested in different things or in different ways? J Individ Differ 38:265–273
- Fechner GT (1876) Vorschule der Aesthetik, vol. 1. Breitkopf & Härtel, Leipzig
- Foster GM (2015) What to do if your inner tomboy is a homo: straight women, bisexuality, and pleasure in M/M gay romance fictions. J Bisexuality 15 (4):509–531
- Gocłowska MA, Baas M, Elliot AJ, De Dreu CK (2017) Why schema-violations are sometimes preferable to schema-consistencies: The role of interest and openness to experience. J Res Pers 66:54–69
- Heinz B (1995) Feminismus oder Pornographie. Zur Darstellung von Erotik und Sexualität im Werk Dacia Marianis. Röhrig, St. Ingbert
- Hogan P (1994) Some prolegomena to the study of literary difference. Poetics 22:243–261
- Illouz E (2013) Die neue Liebesordnung: Frauen, Männer und Shades of Grey. Suhrkamp, Berlin
- Katz E, Blumberg JG, Gurevich M (1974) Utilization of mass communication by the individual. In: Blumberg JG, Katz E (eds) The uses of mass communication: current perspectives on gratifications research. Sage, Beverly Hills, pp. 19–32
- Körner A, Geyer M, Roth M, Drapeau M, Schmutzer G, Albani C, Brähler E (2008) Persönlichkeitsdiagnostik mit dem NEO-Fünf-Faktoren-Inventar: Die 30-Item-Kurzversion (NEO-FFI-30). Psychother Psychosom-Med Psychol 58(6):238–245
- Kraxenberger M (2019a) Zum Stil einer digital geprägten Leserealität: Eine Untersuchung der Fifty Shades of Grey-Trilogie mittels Dargestelltem und Darstellung. Orb Litt 74(3):205–218
- Kraxenberger M (2019b) Erotic romances: an emerging subgenre succeeding Fifty Shades. In: Brock A, Pflaeging J, Schildhauer P (eds) Genre emergence. Peter Lang, Berlin, pp. 13–24
- Lauer G (2018) Gefühl ist alles—Lyrik im Internet. Neue Zürcher Zeitung, <https://www.nzz.ch/feuilleton/gefuehl-ist-alles-lyrik-im-internet-ld.1369814>
- Lüdeke R (2011) Zur Einleitung. In: Lüdeke R (ed) Kommunikation im Populären. Interdisziplinäre Perspektiven auf ein ganzheitliches Phänomen. transcript, Bielefeld, pp. 7–15
- Lawrence KA, Herold ES (1988) Women's attitudes toward and experience with sexually explicit materials. J Sex Res 24(1):161–169
- Modleski T (1982/2008) Loving with a vengeance. Mass-produced fantasies for women. Routledge, London
- Mooradian TA, Davis M, Matzler K (2011) Dispositional empathy and the hierarchical structure of personality. Am J Psychol 124(1):99–109
- Nutz W (1999) Trivialliteratur und Populärkultur: Vom Heftromanleser zum Fernsehzuschauer. Eine literatursoziologische Analyse unter Einschluss der Trivialliteratur der DDR. Springer, Wiesbaden
- Peterson RA (2005) Problems in comparative research: the example of omnivorousness. Poetics 33(5):257–282
- Radway JA (1984/2009) Reading the romance: women, patriarchy, and popular literature. University of North Carolina Press, Chapel Hill
- Reber R, Schwarz N, Winkielman P (2004) Processing fluency and aesthetic pleasure: is beauty in the perceiver's processing experience? Personal Soc Psychol Rev 8:364–382
- Reich M (2015) Vom "Mutti-Porno" zum Marketing-Phänomen, Handelsblatt https://www.handelsblatt.com/arts_und_style/lifestyle/tv-film/fifty-shades-of-grey-vom-mutti-porno-zum-marketing-phaenomen/11356568-all.html
- Schlotz W, Wallot S, Omigie D, Masucci MD, Hoelzmann SC, Vessel EA (2020) The Aesthetic Responsiveness Assessment (AReA): a screening tool to assess individual differences in responsiveness to art in English and German. Psychol Aesthet Creat Arts 1–15. Advance online publication. <https://doi.org/10.1037/aca0000348>
- Sarkhosh K, Menninghaus W (2016) Enjoying trash films: underlying features, viewing stances, and experiential response dimensions. Poetics 57:40–54
- Shapiro J, Kroeger L (1991) Is life just a romantic novel? The relationship between attitudes about intimate relationships and the popular media. Am J Fam Ther 19(3):226–236
- Stern SC, Robbins B, Black JE, Barnes JL (2018) What you read and what you believe: genre exposure and beliefs about relationships. Psychol Aesthet Creat Arts 13(4):450–461
- Thiel C (1991) Liebe, Sex, Karriere: die Modernisierung des trivialen Liebesromans. Argument, Hamburg
- Troche S, Rammsayer TH (2011) Eine Revision des deutschsprachigen Bem Sex-Role Inventory. Klin Diagn Eval 4:262–283
- Tsaros A (2013) Consensual non-consent: comparing EL James's Fifty Shades of Grey and Pauline Réage's Story of O. Sexualities 16(8):864–879
- Watkins MW (2000) Monte Carlo PCA for parallel analysis. Ed & Psych Associates, pp. 432–442

- Whitehead D (2013) When religious ‘mommy bloggers’ met ‘mommy porn’: Evangelical Christian and Mormon women’s responses to *Fifty Shades*. *Sexualities* 16(8):915–931
- Wolf M (2007) *Proust and the squid. the story and science of the reading brain*. Harper Perennial, New York
- Young M (1979) Sexual attitudes and behavior of female readers and non-readers of erotic literature. *Psychol Rep* 45(3):932–934
- Zhao K, Smillie LD (2015) The role of interpersonal traits in social decision making: exploring sources of behavioral heterogeneity in economic games. *Personal Soc Psychol Rev* 19(3):277–302
- Zimmermann HD (1982) *Trivalliteratur? Schema-Literatur! Entstehung Formen Bewertung*. Kohlhammer, Stuttgart

Acknowledgements

Before putting the survey online, it was presented to and discussed with two professional readers from major German publishing houses—to B. Heinzl from Goldmann publishing, who is responsible for the German *Fifty Shades of Grey* editions, and to L. Pagel, at the time of the interview editor at the digital imprints for romance (*Forever*) and crime novels (*Midnight*) at Ullstein publishing. Many thanks for their willingness to be interviewed and the fruitful discussions we had. We would like to thank Freya Materne for her support with data acquisition. Many thanks to Keyvan Sarkhosh, Wolff Schlotz and Valentin Wagner for their useful input. Also, a big “Thank you” to the members of book groups on social media who shared the link to our study on diverse sites. This paper’s data acquisition, analyses, and most of its writing were conducted at the Max Planck Institute for Empirical Aesthetics in Frankfurt am Main, Germany. The first author was financed by the University of Basel during the finalization and submission of the manuscript, and by the University of Stuttgart during the review process.

Author contributions

MK developed the hypotheses and the study design, conducted the interviews with experts from the publishing sector, collected the survey data, performed the data analysis, interpreted the data and drafted a first version of the manuscript. CK and WM provided critical revisions of the data interpretation and the manuscript.

Funding

Open Access funding enabled and organized by Projekt DEAL.

Competing interests

The authors declare no competing interests.

Additional information

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1057/s41599-021-00764-3>.

Correspondence and requests for materials should be addressed to M.K.

Reprints and permission information is available at <http://www.nature.com/reprints>

Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third party material in this article are included in the article’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2021