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Enquiry into the Origin of Our Ideas of the Sublime and Beautiful:

Is there a Male Gaze in Empirical Aesthetics?

Stefan A. Ortlieb^{1,2,3}, Uwe C. Fischer^{1,3} and Claus-Christian Carbon^{1,2,3,*}

¹University of Bamberg

Department of General Psychology and Methodology

Markusplatz 3, D-96047 Bamberg, Germany

²Bamberg Graduate School of Affective and Cognitive Sciences,

Markusplatz 3, D-96047 Bamberg, Germany

³Forschungsgruppe EPÆG (Ergonomie, Psychologische Ästhetik, Gestalt)

Markusplatz 3, D-96047 Bamberg, Germany

*correspondence: ccc@experimental-psychology.com

Abstract

In his ground-breaking *Philosophical Enquiry into the Origin of our Ideas of the Sublime and Beautiful* Edmund Burke (1757) presented a comprehensive aesthetic theory based on two types of aesthetic appreciation: the beautiful and the sublime. While beauty inspires us with tender feelings of affection, a thrill of delightful horror attracts us to the sublime. According to Burke these ideas originate in a drive for affiliation (beautiful) and a drive for self-preservation (sublime). He also claims that the sublime is generally the more powerful aesthetic experience. A synopsis of literature on gender differences in aesthetic preferences, personality traits, and social motivation however suggests that, on average, women might be less susceptible to the Burkeian sublime than men. We tested this hypothesis using 60 picture details from a triptych by Hieronymus Bosch. 150 participants rated these stimuli in terms of threat (respectively safety) and liking. Besides, they completed standardized scales for state and trait anxiety as well as for state and trait depression. We found a strong effect for gender: On average, safety and liking were more closely related for female than for male participants. In the light of these findings we state that Burke's concepts of the beautiful and the sublime might in fact be confounded with gender-related aesthetic preferences and that his proclivity to the sublime could reflect a male gaze on aesthetics. Finally, we discuss possible indicators for 'Burke's fallacy' in empirical aesthetics today.

Keywords: empirical aesthetics; art perception; gender differences; male gaze; aesthetic appreciation; sublime; Edmund Burke; art philosophy

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Introduction

“It is a great thought, a true thought, a demonstrable thought, that the Sublime, as thus ascertained, and in contraposition to the Beautiful, grew up on the basis of sexual distinctions,—the Sublime corresponding to the male, and the Beautiful, its anti-pole, corresponding to the female.”

(De Quincey, 1838/1968, p. 300)

The beautiful and the sublime are two essential, but ill-defined concepts in empirical aesthetics. In Western philosophy three authors have mainly shaped the classical canon of the sublime (Freeman, 1995): Longinus’ (1965) first-century treatise *On Sublimity*, Edmund Burke’s (1757/1990) *Philosophical Enquiry Into the Origin of our Ideas of the Sublime and Beautiful*, and Immanuel Kant’s (1790/1957) *Critique of Judgment*. Edmund Burke (1757/1990) is the first among these three authors who makes an effort to disentangle the concepts of the sublime and the beautiful. In the preface of his ground-breaking treatise he observes “that the ideas of the sublime and beautiful [are] often confounded; and that both [are] indiscriminately applied to things greatly differing, and sometimes of natures directly opposite” (Burke, 1757/1990, p. I). In his *Philosophical Enquiry* Burke devises a comprehensive aesthetic theory which attempts to explain the universality of aesthetic experience based on a distinction of the sublime and beautiful. In a first step he deduces these complementary aesthetic ideas from a comparison of

object properties (what do beautiful/sublime objects have in common?) and subjective states (what do emotional responses to beautiful/sublime objects have in common?). From these observations and introspection Burke develops an understanding of the sublime which accounts for any natural or man-made stimulus array—be it a ‘vanitas’¹, a gothic novel, a thunderstorm, or a tiger—that evokes a sensation of “delightful horror” (Burke, 1757/1990, p. 123): “whatever is fitted in any sort to excite the ideas of pain, and danger, that is to say, whatever is in any sort terrible [...], is a source of the sublime” (Burke, 1757/1990, p. 36). The awe-inspiring thrill of the sublime is contrasted with the more comforting experience of the beautiful. According to Burke beautiful objects are small, smooth and polished, light and delicate, clean and fair in terms of colouring and thus “inspire us with sentiments of tenderness and affection” (Burke, 1757/1990, p. 39). Burke also speculates about physiological correlates of the sublime and the beautiful: When we are exposed to something beautiful, we experience an ease of tension, whereas the encounter with a sublime object induces a state of increased tonicity. Finally, Burke links aesthetic appreciation to social motivation. He claims that our ideas of the beautiful and the sublime arise from two antagonistic drives: A drive for affiliation makes us susceptible to the beautiful, whereas a drive for self-preservation instils us with a passion for the sublime.

Thomas De Quincey (1838/1968) was the first to observe, that theoretical concepts of the sublime and the beautiful are based on an opposition of conventional male and female traits. Freeman (1995) shows that this claim holds particularly true for Burke’s aesthetic theory: “Burke’s distinction between the sublime and the beautiful rests upon an understanding of sexual difference in which the ‘masculine’ passions of self-preservation, which stem from ideas of

¹ A ‘vanitas’ is a still life reflecting on the transience of life and beauty.

terror, pain, and danger, are linked to the sublime, while the ‘feminine’ emotions of sympathy, tenderness, affection, and imitation are the preserve of the beautiful” (Freeman, 1995, p. 48). This becomes particularly apparent in a passage where Burke argues for his understanding of beauty by referring to clear-cut gender stereotypes: “If beauty in our own species was annexed to use, men would be much more lovely than women; and strength and agility would be considered the only beauties. But to call strength by the name of beauty, to have but one denomination for the qualities of a Venus and Hercules, so totally different in almost all respects, is surely a strange confusion of ideas, or abuse of words” (Burke, 1757/1990, p. 96). With this statement Burke relates the idea of beauty to the female stereotype and alludes to an alleged identity of the sublime with the intimidating qualities of Hercules, e.g. superior physical power. Thus, by confounding the beautiful and sublime with gender stereotypes, Burke establishes a hierarchy between these ideas, which mirrors the privileged position of males in 18th century Britain. According to Freeman (1995) a general preference for a sublime aesthetics is discernible among the authors who have formed the classical canon of the sublime. In the introduction of *On Sublimity* Longinus remarks that the sublime “proves superior to the merely persuasive and pleasant” (“Longinus”, 1965, p. 17). Alike Longinus, Burke assumes that “we submit to what we admire [i.e. the sublime], but we love what submits to us [i.e. the beautiful]” (Burke, 1757/1990, p. 103). Presupposing that self-preservation is the most powerful human drive, Burke goes as far as to claim that the *sublime* is “the strongest emotion which the mind is capable of feeling” (Burke, 1757/1990, p. 36).

To the present day, Burke’s aesthetic theory and particularly his concept of the sublime has been influential in both philosophical (e.g. Kant, 1790/1957; Konečni, 2011) and empirical aesthetics (e.g. Eskine, Kacinik, & Prinz, 2012). In this paper we question the apparent proclivity

of Burke, his predecessors and contemporary scholars for “aesthetic awe, as the peak experience” (Konečni, 2011, p. 64). Based on a synopsis of literature on gender² differences in openness to aesthetics, preferences in visual arts, colour vision, neuroticism, and social motivation we hypothesize that women are on average less susceptible to the Burkeian sublime than men. Subsequently, we report on a study which was conducted to test this hypothesis. Finally, we revisit Burke’s aesthetic theory and discuss possible implications for future research in the field of empirical aesthetics.

Synopsis of literature on gender differences

Openness to Aesthetics

There is empirical evidence that women show more interest in art-related pastimes and aesthetic experiences. Chamorro-Prezunic, Burke, Hsu, and Swami (2010) report, that women are more likely than men to visit art galleries or museums. Literature on gender differences in self-reported vocational interests supports this observation by suggesting that women are generally more interested in aesthetics and art-related activities, whereas men tend to show more investigative interests (Costa, McCrae, & Holland, 1984). Secondary analyses of gender differences in personality traits based on the Revised NEO-Personality Inventory (NEO-PI-R) reveal a similar pattern: Across different cultures ranging from Japan to Zimbabwe women tend to score higher than men in openness to aesthetics and feelings, but lower in openness to ideas³ (Costa, Terracciano, & McCrae, 2001). Based on these findings we speculate that gender-related differences in openness and motivation—aesthetic versus investigative interests—might have led

² The term ‘gender’ is used intentionally. Since aesthetic categories and concepts of masculinity and femininity are highly culture sensitive we prefer to speak of ‘gender differences’ instead of ‘sex differences’.

³ In the NEO-Personality Inventory openness to aesthetics, openness to feelings, and openness to ideas are three different facets of the personality factor openness to experience.

to a paradoxical situation in philosophical and empirical aesthetics: Although women seem to care more about aesthetics and the arts, theory and research on these topics have been shaped mainly by men who tend to show more investigative interests. However, this would not be noteworthy, if there was no evidence for gender differences in aesthetic preferences at all.

Aesthetic Preferences in Visual Arts

Apart from motivational aspects, gender differences in aesthetic preferences have been documented in the visual arts domain: A structural equation model by Chamorro-Premuzic et al. (2010) indicates that women are likely to prefer simple and colourful paintings with happy subjects, whereas men tend to favour more complex, geometrical paintings as well as paintings with troubling content (Chamorro-Prezumic, et al., 2010).

Based on these findings by Chamorro-Prezumic et al. we expect women to favour beautiful paintings with cheerful colours that are “clean and fair” (Burke, 1757/1990, p. 106) over sublime artworks featuring “sad and fuscous colours, as black, or brown, or deep purple” (Burke, 1757/1990, p. 75). In the next sections we will integrate these findings into a broader perspective on gender differences.

Neuroticism

Negative affectivity is one of the broad themes in gender differences, with women scoring consistently higher than men on scales associated with neuroticism (Costa, et al., 2001; Feingold, 1994; Lynn & Martin, 1997). In the NEO-PI-R, neuroticism covers many facets of negative affectivity: It is used to assess a person’s liability to experience anxiety, anger, depression, shame, and other distressing emotions (Costa, et al., 2001). In all of these facets except for anger female participants tend to score higher than males. These findings correspond to the epidemiology of generalized anxiety disorder, panic disorder, phobias, and major depression all

of which are more frequently diagnosed among women than among men (American Psychiatric Association, 2014). There is also evidence from cognitive neuroscience suggesting that men and women respond differently to emotional stimulus material and that these differences are particularly pronounced for negative emotional stimuli (Gard & Kring, 2007; Spalek et al., 2015). Studies combining self-report data and various physiological measures—including event-related potentials (ERPs), electromyography (EMG), startle response, and functional magnetic resonance imaging (fMRI)—have shown that women tend to be more responsive to negative pictures than men (Bradley, Codispoti, Sabatinelli, & Lang, 2001; Gard & Kring, 2007; Spalek, et al., 2015): Compared to men, women rated aversive visual stimuli as more arousing and showed stronger physiological reactions.

In sum, these findings might indicate that women experience negative affectivity more frequently and more intensively than men. Thus, we expect that women are on average less susceptible to visual stimuli that are “fitted in any sort to excite the ideas of pain, and danger” (Burke, 1757/1990, p. 36).

Interpersonal traits and social motivation

Sappho of Lesbos is the only female poet quoted by Longinus in his first-century treatise *On Sublimity*. Unlike her male colleagues whose verses deal either with self-assertion on the battlefield or survival in a storm at sea, Sappho’s poem describes “the feelings involved in the madness of being in love” (Longinus, cited after Freeman, 1996, p. 18). This comparison illustrates one of the most consistent findings in the study of gender differences: While men tend to describe themselves high in assertiveness and agentic qualities⁴, women score higher in communal qualities, and nurturance (Eagly & Wood, 1991; Feingold, 1994). Sandra Bem’s

⁴ Agentic qualities refer to a person’s disposition to show independent, directive or masterful behavior.

(1974) influential *Sex Role Inventory* (BSRI) comprises two orthogonal scales for masculinity and femininity. Wiggins and Broughton (1985) showed that these scales are congruent with the axes of the Interpersonal Circumplex: The masculinity scale of the BSRI “is essentially a measure of dominance, whereas Bem’s femininity [scale] is strongly related to the orthogonal dimension of love” (Costa, et al., 2001, p. 232). A secondary analysis of NEO-PI-R data from twenty-six cultures, ranging from Japan to Zimbabwe, revealed that in most of these cultures women described themselves in accordance with traditional gender stereotypes: They scored higher than men in Warmth and Gregariousness, but lower in Excitement Seeking and Assertiveness (Costa, et al., 2001). Apart from self-reports, gender differences in terms of need for attachment and exploration behaviour are underpinned by behavioural observations from different age groups. According to Bischof-Köhler (2006) studies which examined exploration behaviour of toddlers aged between one and two years indicate that male toddlers tend to veer further away from their mother and need less encouragement to explore an unfamiliar environment than female toddlers. Gunnar and Donahue (1980) investigated social responsiveness among toddlers aged between six and twelve months and found that female toddlers sought more frequently for eye-contact with their mothers and were generally more responsive to their mothers than male toddlers. In a study by Gubler and Bischof (1994) participants aged between ten and 33 years were seated in the cock-pit of a computer-simulated spaceship and instructed to go on an explorative mission into space. Although the average distance from the home base (‘Mother Earth’) was positively correlated with age, there was a consistent gender-related effect across different age groups: On average, male participants travelled further into space than female participants. Besides, male participants decided to land their spaceship on a foreign planet more often than female participants. In sum, these findings

suggest that males tend to show a greater readiness for enterprise and autonomy, whereas females are more likely to display a higher need for security and attachment (Bischof-Köhler, 2006).

Literature on gender differences in interpersonal traits and social motivation is particularly relevant for the appraisal of Burke's aesthetic theory since his categories of the sublime and the beautiful are based on "an understanding of sexual difference in which the 'masculine' passions of self-preservation [...] are linked to the sublime, while the 'feminine' emotions of sympathy, tenderness, affection, and imitation are the preserve of the beautiful" (Freeman, 1995, p. 48).

However, there is an apparent inconsistency between Burke's claim, that the sublime is generally the more powerful aesthetic idea, and the differential—i.e. gender-specific—implications of his aesthetic theory. Based on the available empirical data we hypothesize that stimuli which correspond to Burke's definition of the beautiful are more attractive for women, whereas we expect men to favour stimuli which display the characteristic features of the sublime *sensu* Burke (1757/1990). In the next sections we present a study which was conducted to test these two hypotheses.

Method

Burke's aesthetic theory predicts that the sublime overrules the beautiful. If this is the case, we expect that, under otherwise equal conditions, an artwork featuring threatening content will be favoured over an artwork with non-threatening content. However, being based explicitly on gender stereotypes, Burke's distinction of the beautiful and sublime also has gender-specific implications. According to a synopsis of literature on gender differences, we predict that, under otherwise equal conditions, women will favour artworks with non-threatening content over artworks with threatening content. In order to test these hypotheses we conducted an online-

study based on a triptych by Hieronymus Bosch known as ‘The Garden of Earthly Delights’. We chose this artwork from the early 16th century for its apparent content validity in relation to Burke’s (1757/1990) concepts of the beautiful and the sublime. First of all, the triptych displays a great variety of emotional content ranging from composed happiness (left and centre panel) to fear and despair (right panel). The left panel shows a state of perfect harmony: Christ is depicted together with Adam and Eve who are enjoying the comforts of the Garden of Eden. The centre panel shows an exotic garden which is populated with a great number of mythical creatures as well as groups and couples of mostly nude men and women engaged in playful and erotic pastimes. However, these visions of paradisiacal and earthly delights are harshly contrasted by the right panel of the triptych showing an infernal scenario of human suffering: Unlike the two preceding panels the scene is set at night. The dark background is illuminated only by burning cities and explosions. In the mid- and the foreground the viewer is confronted with grotesque atrocities: Nude men and women are threatened, humiliated, and tortured by demons and mutated animals feeding on human flesh. According to Burke (1757/1990) anything that alludes to the “idea of bodily pain, in all modes and degrees of labour, pain, anguish, torment, is productive of the sublime” (Burke, 1757/1990, p. 79).

[Fig. 1 about here]

Apart from its emotional content the triptych displays a set of stylistic features that are well in line with Burke’s concepts of the beautiful and the sublime: Burke (1757/1990) claims that beautiful objects are distinguished by colours that are “clean and fair” (Burke, 1757/1990, p. 106). Moreover, he states that the colours “most appropriate to beauty, are the milder of every

sort; light greens; soft blues; weak whites; pink reds; and violets” (Burke, 1757/1990, p. 106). Accordingly, the colour palette of the left and the centre panel is predominated by the light green of vegetation against the soft blue hues of the sky. Important details on these two panels—e.g. the gown of Christ and the two fountain-like sculptures in the mid-ground—have been executed in pink. By contrast, Burke (1757/1990) states that obscurity and “terrible uncertainty” (Burke, 1757/1990, p. 58) are distinctive features of the sublime. He claims that “sad and fuscous colours, as black, or brown, or deep purple” (Burke, 1757/1990, p. 75) contribute to the sublime effect of an object. As mentioned before, the scene on the right panel is set at night and the colour palette is dominated by black and dark brown hues. Besides, the events depicted in the background of the panel are unclear as contours are blurred and figures are hardly discernible against the dark background.

In sum, we conclude that ‘The Garden of Earthly Delights’ by Hieronymus Bosch is well agreed with Burke’s concepts of the beautiful and the sublime in terms of content as well as in terms of style. Hence, details from the triptych were considered to be valid stimuli for our online-study. Due to its exceptionally broad variety of emotional content—encompassing both the beautiful and the sublime—this study was based on a single artwork, created by a particular artist in a certain period of time. As a result, the stimulus material is not confounded with features of different epochs, genres, artistic styles or ‘Formensprache’ (Carbon, 2010). A total of sixty quadratic picture details were cropped from a digital reproduction⁵ of the triptych using Photoshop® CS5. The resolution of each detail was limited to 800 × 800 pixels to ensure that each

⁵ The triptych titled ‘Garden of Earthly Delights’ (oil on panel, original height: 220 cm/86.6 in, width: 390 cm/153.5 in) by Hieronymus Bosch is on display at the Museo del Prado in Madrid, Spain. The digital reproduction used in this study can be retrieved from http://en.wikipedia.org/wiki/File:The_Garden_of_Earthly_Delights_by_Bosch_High_Resolution.jpg under common rights.

stimulus could be presented simultaneously with a corresponding rating scale even on small computer displays. Thirty details with non-threatening (i.e. beautiful) content were extracted from the left and the centre panel of the triptych (see Fig. 1). Another thirty details with threatening (i.e. sublime) content were taken from the right panel. For this selection of stimuli an ex post validation was conducted, based on the data of the study (see results).

The online-questionnaire was generated and run using the online-platform SoSci Survey (<https://www.soscisurvey.de>). The procedure of the online-study is shown in Fig. 2. Initially, participants answered two demographical items (age and gender) and completed the State-Trait-Anxiety-Depression-Inventory (STADI) by Laux, Hock, Bergner-Köther, Hodapp, Renner, and Merzbacher (2013). The STADI is designed to discriminate between anxiety and depression based on state and trait measures. The inventory is subdivided into a trait (20 items) and a state section (20 items). In the state section the person's present emotional state is assessed by four subscales (4 × 5 items): Two subscales address the affective (*state emotionality*) and the cognitive (*state worrying*) component of anxiety, whereas the present mood is also captured with two separate subscales for positive (*state euthymia*) and depressive mood (*state dysthymia*). The four subscales of the trait section are designed to assess a person's general disposition to experience anxiety and/or depression in a variety of different situations. Trait anxiety is measured by the subscales *trait emotionality* and *trait worrying*, whereas trait depression is operationalized by the subscales *trait euthymia* and *trait dysthymia*. According to the test manual it takes about ten minutes to complete the STADI (Laux, et al., 2013). The STADI has been validated for non-clinical as well as for clinical populations; it is apt for basic research as well as for clinical research (Laux, et al., 2013). After completing the STADI-items, participants rated each of the sixty picture details in two separate trials in terms of safety (respectively threat) and

liking. Safety/threat was rated on a 7-point rating scale ranging from 1 (*threatening*) to 7 (*safe*). There was no time limit. Liking was also assessed on a 7-point rating scale (1=*I don't like it at all*; 7=*I like it very much*). Again there was no time limit. The Burkeian idea of sublimity was operationalised by *threateningness*, respectively *safety*, because the adjective “sublime” (German *erhaben/Erhabenheit*) is mainly a philosophical term which is hardly used in colloquial German. Even as a technical term its denotation is unclear as it may refer to a great variety of concepts (e.g. Kant vs. Burke). Throughout his *Philosophical Enquiry* Burke maintains that the sublime elicits an arousing sensation of “delightful horror” (Burke, 1757/1990, p. 123). We decided to use the colloquial adjective “threatening” (German *bedrohlich*) because it is unequivocal and very specific for the Burkeian sublime. In combination with “liking” (German *gefallen/Gefallen*) we argue that a basic discrimination between Burke’s notions of the beautiful and sublime can be made: Images scoring high on liking and safety cannot be sublime in a Burkeian sense. Since Burke’s aesthetic theory stipulates that the beautiful and the sublime are exhaustive and mutually exclusive categories, these stimuli are considered beautiful. Images, however, that are liked although the spectator describes them as threatening, reflect the unsettling ambivalence of “delightful horror” (p. 123).

In order to control for effects of sequence participants were randomly assigned to two conditions: in the first condition they rated liking prior to safety/threat, whereas in the second condition the order of the two trials was reversed and safety (respectively threat) was rated prior to liking. Moreover, within each condition stimuli were also presented in a random order.

[Fig. 2 about here]

Sample

In total, one hundred and fifty persons (103 women, 47 men) participated in the online-study. One hundred and twenty-one persons (76 women, 45 men) aged between sixteen and sixty-five years ($M_{\text{age}} = 27.6$ yrs., $SD_{\text{age}} = 11.6$) responded to an invitation which was distributed among members of the social network Facebook[®]. In addition, twenty-nine undergraduate students (27 women, 2 men) from the University of Bamberg participated in this study for course credit ($M_{\text{age}} = 20.6$ yrs., $SD_{\text{age}} = 2.9$).

Results

Descriptive and inferential analyses were performed using Excel[®] 2007 and SPSS[®] (version 21). Initially, content validity of the selected picture details was analysed. Figure 2 shows the scatter plot of the mean threatening/safety-ratings for each picture detail used in the online-study. Content validity of the selected stimuli was confirmed by a dependent two-tailed t-test, $t(149)=39.5, p < .001, d=4.33$: It shows that details from the right panel of the triptych were rated significantly more threatening ($M = 2.3, SD = 0.70$) than details that had been taken either from the left or from the centre panel ($M = 5.2, SD = 0.63$).

[Fig. 2 about here]

Across all participants safety ratings were strongly related to liking ($M_r = .45, SD_r = .38$). On an individual level, however, correlations varied greatly between participants ranging from highly negative ($r = -.76$) to an almost perfect positive correlation ($r = .96$). Figure 3 shows a distribution of these correlations for male and female participants. Prior to further analyses correlation coefficients were transformed into Fisher-Z-values. An independent t-test revealed a

highly significant effect for gender, $t(148) = -6.67, p < .001, d = 0.87$: Safety and liking were more closely related for female ($M_r = .70; SD_r = 0.55$) than for male participants ($M_r = .22; SD_r = 0.55$). Interrelations with state- and trait-subcales of the STADI were analysed, but did not yield any significant results.

[Figs 3 and 4 about here]

Discussion

In our present study we addressed two aspects of Burke's aesthetic theory: First, we examined Burke's basic assumption that the sublime (represented by images with threatening content) is always superior to the beautiful (represented by images with non-threatening content). Second, we sought to examine the gender-related implications of Burke's aesthetic theory suggesting that women should prefer the beautiful over the sublime. Our attempt to test Burkeian aesthetics provokes the question, if sublimity can be studied in a lab setting at all: Does our study really touch upon sublimity, or is it merely about images with threatening and non-threatening content? We argue that Burke's approach to aesthetics is an inductive one. He derives his notion of the beautiful and sublime from everyday phenomena. Clearly, his understanding of sublimity is not limited to epiphanic moments, but also comprises experiences such as the intimidating encounter with a potentially harmful animal of great physical strength. Based on these introspections Burke claims that the entire scope of aesthetic experience may be subdivided into two universal categories. Threatening content allows for a clear distinction between these universal categories. Thus, we argue that a study based on images with threatening and non-threatening content may serve as a touchstone for Burke's basic assumptions about the beautiful and sublime.

Our findings do not support Burke's claim, that the sublime is generally the more powerful aesthetic idea: A majority of participants clearly favoured picture details with non-threatening content over picture details with threatening content. This result is inconsistent with previous findings by Eskine et al. (2012) who report that liking of abstract geometrical paintings by the Russian artist El Lissitzky was increased among participants who had watched a scary video clip beforehand. Yet, the stimulus material used by Eskine et al. (2012) did not feature any of the sublime object properties specified by Burke and hence, fear was not induced by the artwork itself. At this point further research is needed to clarify the underlying mechanisms.

The gender-specific implications of Burke's aesthetic theory, however, are confirmed by a strong effect for gender ($d=0.87$): On average, women were more attracted to picture details corresponding to Burke's definition of the beautiful, whereas a small group of mostly male participants favoured stimuli with threatening content. These gender-related differences in aesthetic preference are consistent with Chamorro-Prezumic et al. (2010), who report that women were likely to prefer simple, colourful paintings with happy subjects, whereas men tended to favour complex paintings with troubling content. Of course a strong effect for gender does not imply that a preference for threatening content can be generalized for all males of our sample. The distribution displayed in Fig. 5 shows that there is a great variability of preferences within the male sample. This might indicate that those men who apparently share Burke's preference for the sublime might also have other aspects in common (e.g. social status, art expertise). Further research is needed to identify possible commonalities of this particular male subsample. At this point we would also like to stress, that Burke does not postulate a particular preference for the sublime among men, but that sublimity is *generally* preferred over beauty. This is why we make a case that his aesthetic theory reflects a preference for sublimity (e.g. images with threatening content) which is more likely to be found among men than among women.

Do our findings challenge Burke's aesthetic theory? Burke's (1757/1990) inductive approach to historically and culturally dependent categories of aesthetic judgment has been repeatedly criticized (Freeman, 1995; Strube, 1989). Evidently, Burke has overgeneralized his personal taste—the taste of a 28-year-old male upper-class protestant from the 18th century—by deriving universal principles of aesthetic judgment from introspection and by communicatively validating these insights in a 'peer review' process⁶. To a certain extent our findings add to this criticism, since Burke's theory does not account for a majority of participants in favour of non-threatening content. However, it applies remarkably well to 21% of the male ($n=10$; $M_{age} = 23.0$ yrs; $SD_{age} = 4.8$) but only to 5% of the female ($n=5$; $M_{age} = 30.8$ yrs; $SD_{age} = 14.7$) participants in our sample, who share Burke's preference for the sublime. Thus, we conclude that Burke's theory is biased by a male gaze upon aesthetics. Next to Longinus' treatise *On Sublimity* and Kant's *Critique of Judgment*, Burke's *Philosophical Enquiry* is one of the most influential texts on the sublime and the beautiful. It appears that all of the three authors, who have formed this classical canon, tend to despise the beautiful by putting special emphasis on the sublime. We speculate that this male-dominated theoretical tradition and the prevailing gender differences in openness—openness to aesthetics versus openness to ideas—and vocational interests—art-related versus investigative interests—might have produced a paradoxical situation in empirical aesthetics: Although studies on openness to aesthetics and vocational interests show that women care more about aesthetics and the arts, research topics in this field have been defined mostly by men in accordance with ideas of the beautiful and the sublime which reflect male interests and aesthetic preferences. In the following section we will discuss possible indication for a male gaze in empirical aesthetics today.

⁶ In the preface to the first edition of his *Philosophical Enquiry* Burke acknowledges “*friends, men of learning and candour*” (Burke, 1757/1990, p. 2, emphasis by the authors) for reviewing his manuscript prior to publication.

Is there a male gaze in empirical aesthetics today? Biased by an essentialist fallacy Burke's aesthetic theory emphasizes the awe-inspiring and disturbing properties of the sublime compared with the reassuring and comforting qualities of the beautiful. A similar asymmetry is discernible in the field of aesthetics: From the very beginning of aesthetics as a philosophical discipline to present day empirical aesthetics the 'enigmatic' (Baumgarten, 1961), the 'sublime' (Burke, 1757/1990; Kant, 1790/1957), the 'arousing' (Berlyne, 1971), and the 'ambiguous' (Muth & Carbon, 2013) qualities of distinguished artworks have been of deliberate concern. As a result, theoretical approaches to psychological aesthetics put a strong emphasis on constructs such as 'arousal' (Berlyne, 1971), 'aesthetic awe' (Konečni, 2011) and 'cognitive mastery' (e.g. Leder, Belke, Oeberst, & Augustin, 2004). Meanwhile, there is a considerable body of research which stresses the relevance of e.g. familiarity (Zajonc, 1968) and feelings of safety (Carbon, Faerber, Gerger, Forster, & Leder, 2013) and belonging (Landau, Greenberg, Solomon, Pyszczynski, & Martens, 2006) for aesthetic appreciation. Our present findings even suggest that for a majority of us it is probably not the awe-inspiring but the reassuring qualities that make an artwork appealing. In sum, the results of our study support the notion of two complementary types of aesthetic appreciation—an explorative and an affirmative one—which can be traced back to the ground-breaking works of 18th century philosophical aesthetics (see review by Armstrong & Detweiler-Bedell, 2008). However, our study raises the question, whether this tradition has carried forward a disregard for affirmative aesthetics.

Limitations and future research

The present study displays several limitations which may serve as inspiration for future research. Burke's aesthetic theory is complex and multifaceted. Threatening content is one of its essential dimensions as it allows for a clear discrimination between the Burkeian ideas of the beautiful and

sublime. Besides, our stimulus material also reflects Burke's ideas of the beautiful and sublime in terms of colouring (bright colours vs. fuscous colours) and determinacy (clarity vs. indeterminacy). Nevertheless, our stimulus material excludes important dimensions such as size and shape: Burke claims that large physical size (particularly vastness) and a sharp-edged irregular shape will add to the sublimity of an object, whereas smallness in combination with a curved and regular shape will contribute to the beautiful. Recent findings suggest that different shapes could in fact amplify the impact of stimuli with threatening and non-threatening content: According to Bar and Neta (2006) curved objects are generally preferred over sharp-angled objects because the latter are perceived as potentially harmful (see Carbon, 2010 for an opposing point of view). Since size and shape were identical for all stimuli (800 × 800 pixels) in our present study, we cannot account for these facets. In any case it would be worthwhile to find out whether the results of our study are replicable when shape and size are taken into consideration (e.g. by using small circular images with non-threatening content and large, triangularly shaped images with threatening content).

Moreover, our study cannot clarify to what extent gender differences in aesthetic appreciation of Burke's ideas of the beautiful and sublime are shaped by sociocultural factors and to what extent they might be consistent with a biological view. At this point, it would be interesting to learn more about the interrelations between aesthetic preferences and gender-related self-concepts. For instance, *Bem's Sex Role Inventory* could be used to determine whether a combination of measures for masculinity and femininity allows for a better prediction of aesthetic preference than demographic categories of men and women. Apart from gender identity as a sociocultural construct, a study on gender differences always touches upon the issue of social desirability. Ideally, we expect participants to answer according to their implicit gender-

related self-concepts. However, it cannot be ruled out that participants make a deliberate effort to answer in accordance with gender roles which they deem socially accepted (e.g. “men ought to be tough”). Nevertheless, for the following reasons we feel quite confident that social desirability did not constitute a source of systematic distortion in our present study: First and foremost, we can assume that participants were naïve to the purpose of the study. In Germany, the works of Edmund Burke—particularly his early treatise on aesthetics—are widely unknown. Besides, this was the first study on Burkeian aesthetics and gender differences which we conducted at our department. Thus, even the 29 students, who might have been familiar with our previous research, were not able to infer the purpose of this study from other studies. Second, apart from a single demographical question, gender was not addressed in the online questionnaire. Given this standard item there was no apparent reason for participants to assume that this study was targeting gender differences in aesthetic appreciation. Third, the online-study provided anonymity. This is a clear advantage of online-studies compared with experiments in a lab setting which may constitute a powerful social situation: In a lab setting participants are often motivated to make a good impression by acting in accordance with expectations of the experimenter present. To a certain extent they can also infer what is acceptable from the appearance and the demeanour of the experimenter. In an online-study, however, there is no such social interaction. Thus, it is more difficult for participants to infer e.g. desirable gender roles from an online questionnaire. Fourth, since participants volunteered to participate, there was no incentive to answer in accordance with certain expectations. Participant instructions explicitly stated that there are no correct or incorrect answers. Since anonymity of participation was ensured by a participant key and course credit was distributed for completing the online questionnaire, irrespective of the answers given, we claim that there was no incentive to answer

in accordance with certain expectations. Fifth, liking and threateningness were rated in two separate trials; the order of trials as well as the order of stimuli within each trial was randomized. Apart from balancing effects of sequence, these precautions made it quite difficult to intentionally maintain a particular answer pattern. Sixth, in an academic context compliance with traditional gender roles (e.g. “men ought to be tough”) is not necessarily desirable. Traditional gender roles are not as widely accepted and binding as they used to be (especially among students of the humanities and social sciences). In sum, we argue that there was no incentive for participants to comply with a certain gender stereotype. Even if participants had wished to conform to our expectations, it would have been difficult to derive hypotheses or desirable gender roles from the study material. Last but not least, intentional manipulation of responses was hindered by randomization of trials and stimuli.

Choice of stimuli for our study forms a second limitation: in order to eliminate influences from different styles and preferences for certain artists, stimulus material was derived from a single artwork by Hieronymus Bosch. Thus, further research has to clarify whether the effect for gender might be specific to the material used. In order to maintain our claim that Burke’s ideas of the beautiful and sublime are confounded with gender-related differences in aesthetic appreciation, it would certainly be important to show that the gender differences are replicable with stimulus material from different epochs and artistic styles.

Furthermore, our study has examined Burke’s aesthetic theory in the visual domain.⁷ Also in respect of gender differences in aesthetic appreciation, choice of domain is a further limitation, as the term male *gaze* itself suggests that a general preference for the visual domain in

⁷ In fact Burke claims that his basic distinction of the sublime and the beautiful also applies to phenomena in the auditory and the haptic domain. In a section on “Smell and Taste” (Burke, 1757/1990, p. 78) he even relates the sublime to the gustatory (“excessive bitterness”, p. 78) and the olfactory (“intolerable stench”, p. 78) domain.

empirical aesthetics might already be a constituent of a gender bias: For instance, Freeman (1995) observes that male authors tend to relate the sublime to visual stimulation, whereas in women's fiction "sublime encounters are [often] occasioned by something heard" (Freeman, 1995, p. 29). Thus, it would be interesting to find out whether gender differences in aesthetic appreciation of the Burkeian sublime and beautiful are consistent across different modalities. For instance, Freeman (1995) rejects Burke's binary and hierarchical categories of the beautiful and the sublime by postulating a 'feminine sublime' which is not "merely another, more intense version of the beautiful" (Freeman, 1995, p. 3), but a different approach to dealing with a "experience that resists categorization, in which the subject enters into a relation with an otherness [...] that is excessive and unrepresentable" (Freeman, 1995, p. 2). This approach could be addressed by further qualitative research on aesthetic concepts.

Last but not least, we would like to encourage researchers in the field of empirical aesthetics to read the classics, to take them seriously and to test them empirically. To our understanding, classical texts such as the *Philosophical Enquiry* by Edmund Burke (1757/1990) can compensate for what is still missing in empirical aesthetics today: a comprehensive theoretical framework which allows for an integration of motivational, emotional and cognitive aspects of aesthetic judgement.

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Figure Captions

1 [Figure 1: Selection of picture details]

2 [Figure 2: Procedure of the online-study]

3 [Figure 3: Scatter plots for threatening and non-threatening items]

4 [Figure 4: Distribution of correlation coefficients for female participants]

5 [Figure 5: Distribution of correlation coefficients for male participants]