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To know, to feel, to share? Exploring the motives that drive curiosity for negative content[☆]

Esther Niehoff¹ and Suzanne Oosterwijk^{1,2}



In recent years, empirical work has documented a curiosity for negative content – people deliberately view images detailing death, violence or harm or engage with other aversive stimuli. The question that emerges from this work is *why* people are curious about aversive information. Our central premise is that curiosity for negative content can be valuable – it may serve fundamental psychological functions and have beneficial outcomes. In terms of benefits, negative content may provide an individual with an opportunity to acquire knowledge, reduce uncertainty, experience valued emotions, or engage with the experiences of others. At the same time, the exploration of negative information may be costly. In this article, we discuss which factors may motivate or discourage the exploration of negative content.

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Curiosity for negative content is a common phenomenon in daily life. People deliberately expose themselves to negative information; they click the link detailing a terrorist attack, choose to watch a gruesome documentary or visit the location of a terrible event. Although many people can relate to this phenomenon, there is limited scientific understanding of *why* people are curious about aversive information [1,2[☆],3]. The present article takes a first step in charting the potential motives that drive curiosity for negative content.

Curiosity for negative content

In the last 15 years, scientists from a variety of different backgrounds have taken an interest in the ubiquitous behavior of seeking out aversive experiences. Several studies support the idea that people can enjoy negative experiences [4,5[☆]], such as horror movies [6] or sad novels [7]. Nevertheless, enjoyment is not a prerequisite for seeking out negative information; people also report curiosity, interest, or fascination for information that is experienced as deeply unpleasant, including disturbing art [8], news coverage of the 9/11 attacks [9] and videos of beheadings [10[☆]].

In line with views that emphasize that curiosity drives information-seeking behavior [11–13], recent work has specifically targeted the behavioral component of curiosity for negative content. For example, Hsee and Ruan [14] demonstrated that people deliberately exposed themselves to electric shocks, unpleasant sounds and images of insects, even when they had a non-aversive, alternative choice. Furthermore, Oosterwijk [2[☆]] demonstrated ‘morbid curiosity’ for images portraying death, violence or harm using a behavioral paradigm (see also Ref. [15[☆]]). She found that people are particularly inclined to explore intensely negative *social* scenes (e.g. violent social conflicts, rescue workers helping victims). These scenes were chosen more often than images with graphic mutilation, and were preferred over viewing neutral social scenes. The burning question that follows from these findings is why people act like this. What is the value of engaging with negative information?

Curiosity versus curiosity for negative content

A first relevant question to ask is whether curiosity for negative content is simply a different ‘flavor’ of regular curiosity, with similar underlying mechanisms and functionality, or whether it should be treated as a distinct construct. In this article, we take the first position. We propose that the general definition of curiosity — an intrinsically motivated drive state for information [12,16[☆],17,18] — also applies to curiosity for negative content. This position is supported by a recent study that investigated whether brain regions traditionally associated with curiosity, value computation and reward, are also involved when people deliberately exposed themselves to intensely negative social scenes [15[☆]]. In this

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study, participants made choices to view negative and positive images, based on verbal cues (e.g. a soldier kicks a civilian in the head). As predicted, choosing negative images engaged brain regions (e.g. striatum, inferior frontal gyrus, anterior insula, orbitofrontal cortex and anterior cingulate cortex) associated with regular curiosity [12,19^{*},20,21], and the processing of extrinsic incentives and reward [22,23]. This finding suggests that knowledge acquisition is valuable [16^{*},24], even when people acquire knowledge about the negative aspects of the social world.

Although these neuroimaging findings suggest a similarity between regular curiosity and curiosity for negative content, there are also factors that distinguish them. Regular curiosity is commonly associated with positive affect [11]. Curiosity for negative content, however, may be best characterized as a conflict state in which people want information, without predicting that they will like the information [1,9]. Moreover, although curiosity may generally involve an approach/avoidance dilemma in which people appraise their potential to process information [19^{*}], we propose that a cost-benefit analysis is particularly salient in curiosity for aversive information. Decisions to act on one's curiosity and explore negative information may follow a cost-benefit analysis in which the predicted benefits outweigh the predicted costs. In the next section, we will discuss which factors could reflect these benefits and may motivate curiosity for negative content, while also discussing which factors may discourage the exploration of negative content.

Motives

We distilled the motives that may drive curiosity for negative content from an extensive body of literature, spanning topics such as curiosity, motivation, emotion regulation, art reception and media consumption. We discuss both theoretical and empirical work that explicitly targets curiosity, and work that covers voluntary engagement with negative content more generally. For structural purposes, we grouped the motives into three categories: informational motives (i.e. what is the informational value of exploring negative content), emotional motives (i.e. to what extent does exploring negative content evoke sensations or emotions that are valued), and social motives (i.e. what is the social value of exploring negative content). Note, however, that boundaries between these different groups can be blurry.

Informational motives

Motives to learn, understand or acquire knowledge (i.e. epistemic motives) lie at the core of many models of curiosity [16^{*},25,26]. Such motives, that focus on the information offered by particular content, have rarely been applied to curiosity for negative content. It is not unlikely, however, that negative content offers unique informational value. Learning about negative events

may be adaptive because it contributes to building a realistic model of the world [27]. Moreover, curiosity for the negative experiences of others might be a strategy to 'prepare' for negative events [28], or obtain information about negative situations without the need to experience them yourself [29]. It is important to note; however, that although a desire to 'know' may motivate the exploration of negative content in some circumstances, it is not unlikely that in other circumstances people choose 'not to know' [30^{*}], because they predict that they are unable to cope with the acquired knowledge [31].

Another important informational motive that curiosity for negative content may share with regular curiosity, is a desire to reduce uncertainty [13,17]. People may experience curiosity for uncertain stimuli, because they value the predicted information update when resolving the uncertainty [19^{*},26,32]. The previously discussed work by Hsee and Ruan [14], demonstrated a link between curiosity for negative content and uncertainty by presenting 'prank pens' to participants that could give painful, but harmless shocks. The authors found that participants clicked pens most often when it was uncertain whether they would give a shock as opposed to when it was certain that the pens would (not) shock them. Thus, people preferred a reduction in uncertainty above the negative experience of receiving a shock. In a similar way, people may be motivated to engage with aversive information to resolve the uncertainty it evokes. For example, people may be motivated to reduce uncertainty about the extremity or impact of an event involving death, violence or harm by seeking out more information. For visual stimuli, people may decide to 'look' to resolve uncertainty about the validity of their own mental image of a negative event (e.g. is the accident as extreme as I imagine it to be?).

In addition to uncertainty, scientists have suggested that information that is novel, unusual, complex or challenging is particularly prone to evoke curiosity [11,20,31,33,34]. Based on work that proposes that negative information is more deviant from the norm and less 'alike' as compared to positive information [35^{*},36], we propose that motives to seek out novelty, complexity or challenging information may drive people to explore negative content. Moreover, people may engage with aversive content because they are motivated to engage with 'thought-provoking' information [29] or want to engage in effortful meaning-making [5^{*}]. Motives to seek out the cognitively challenging aspects of negative information may specifically resonate within individuals with a high openness to experience or need for cognition ([16^{*}], see also Ref. [37], this issue) or those who value an eudaimonic search for meaning or personal development in life [29,38,39].

Emotional motives

Negative content can elicit sensations (e.g. arousal) or discrete emotional reactions (e.g. sadness, disgust) that some people may consider costly, resulting in an inhibition of curiosity or exploratory behavior (for a discussion about the role of affect in curiosity, see Ref. [37], this issue). For example, anticipated regret may motivate people to avoid aversive content [40]. Nevertheless, other people may be motivated to seek out aversive content because they actually value the emotional experiences or sensations that are evoked [7].

First, people may value the arousal evoked by aversive information. Research on the personality dimension of sensation seeking has indeed identified a positive relationship between the desire for thrill and adventure and curiosity for negative content ([41,42]; see also Ref. [2]). Berlyne [25] suggests that it is mainly boredom — a prolonged lack of arousal — that motivates people to explore information that elicits arousal. Support for this assumption was recently provided by Bench and Lench [43] as well as Wilson *et al.* [44], who repeatedly observed that experimentally induced boredom prompts people to seek out aversive experiences. Others argue that people may be motivated to approach negative content, because they derive pleasure from experiencing bodily reactions in a relatively safe context [45], or how Rozin *et al.* [7] put it, from ‘mastery of mind over body’.

Second, people may value the discrete negative emotions elicited by aversive information [38,46]. For example, the exploration of negative content may provide a safe way to learn about emotions and the contexts in which they are elicited, which in turn may enhance emotion differentiation skills (i.e. people’s ability to differentiate between discrete negative states, such as fear, sadness, anger; [47]). Additionally, engaging with negative information in a relatively safe context may provide an opportunity to learn and practice emotion regulation skills [48]. To illustrate, research targeting ‘haunted house’ visitors suggests that people choose to expose themselves to fear-inducing experiences, because it allows them to challenge themselves and thereby train distress tolerance [49]. This utility of voluntary exposure to negative content in terms of acquiring emotional skills may be specifically relevant for children and adolescents, who are still developing and fine-tuning their emotional reactions.

Social motives

Finally, negative content may be explored for its social value. Being curious about negative social information may prompt empathy, including sharing another person’s feelings or taking another person’s perspective, which may benefit social affiliation [11]. Additionally, learning about other people’s suffering may increase people’s skills in understanding and predicting other people’s internal states, which may enhance the ability to

successfully navigate social interactions [50,51]. Note, however, that empathy is costly in terms of mental resources [52,53], and thus a high level of predicted empathy may in some circumstances motivate people to refrain from engaging with aversive content. Finally, people may be motivated by a sense of moral obligation to inform themselves about other people’s suffering. In this case, people may choose to approach negative information because the negative emotions elicited by this exploration are congruent with their goal to follow social or moral norms [38,52].

The above argument highlights that the decision to explore negative content does not happen in a social vacuum. Motives to follow social norms or engage in social comparison may be one of many ways in which the social environment impacts curiosity in general [54] and curiosity for negative content in particular. For example, people may decide to explore negative information as a tool for social comparison or reaffirmation of social norms, by comparing one’s own response to that of peers [55]. Moreover, the thoughts, feelings and behaviors of others regarding negative information may serve as a social reference point stimulating people to want to know what other people know [26].

Discussion and future directions

The motives discussed in this article can be unified in the idea that exploring negative content has value. Scientists focusing on regular curiosity have proposed that the reward value that drives curiosity lies in knowledge acquisition [16]. In other words, information may be a reward ‘in and of itself’ [17,18,24]. Building on these theories, we propose that curiosity for negative content may be driven by the expected reward value of an anticipated gain in information (see further [15]). Moreover, negative content may evoke affective or social experiences that people perceive as valuable. Thus, even though it is unlikely that exploring negative content results in the most obvious indicator of reward — a pleasurable experience — it may be intrinsically rewarding [18], because it allows people to acquire knowledge (informational motive), experience a valued emotion or sensation (emotional motive) or fulfill a personal moral goal (social motive). To test these motivational predictors, future research will need to empirically map the potential motives for exploring negative content and formally assess how these motives shape actual behavior.

In doing so, it is important to compare the motives that predict the exploration of negative information, with the motives that predict the exploration of positive or (relatively) neutral information. In the last decade, some progress has been made in uncovering the motives that drive curiosity (e.g. in Ref. [56]). Nevertheless, studies on curiosity demonstrate low diversity in stimulus materials (i.e. predominantly lottery tasks and trivia questions;

[19*,57]) and often ignore valence (but see Refs. [24,30*]). We believe that approaches that include valence as a factor are essential in determining whether the mechanisms that underlie ‘regular’ curiosity generalize to instances in which people express curiosity for emotionally charged information. This could lead to more realistic models of which information piques people’s curiosity, and why.

One factor that may be relevant to integrate into the (small) literature on curiosity for valenced information, is the self-relevance of aversive content. Inspired by real-life examples of people exploring other people’s suffering (e.g. through books, movies and online content), the previously discussed work on ‘morbid curiosity’ demonstrated a curiosity for images displaying negative events happening to *other* people [2*,15*]). These research findings stand in contrast to recent work that demonstrates that people choose to *ignore* information about undesirable self-relevant information, such as outcomes in a personal lottery task [30*]. These findings might be applicable to real-life situations in which people refuse medical tests, because they do not want to know the (potentially negative) outcome [17]. Future research is needed to identify under what circumstances the self-relevance of negative content may inhibit or facilitate information-seeking behavior.

In conclusion, although future research into curiosity for negative content is warranted and many questions remain unanswered, the present review suggests that a deliberate exposure to negative information may contribute to successfully navigating the social world. In other words, curiosity for negative content may have merit.

Conflict of interest statement

Nothing declared.

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Papers of particular interest, published within the period of review, have been highlighted as

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