

# Curiosity and information-seeking behaviour: a review of psychological research and a comparison with the information science literature

Curiosity and  
information  
seeking

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## Abstract

**Purpose** – The aim of this paper is to review the psychological literature on curiosity and its relationship to information-seeking behaviour, and compare this with the information science literature on the same subject.

**Design/methodology/approach** – The approach adopted is that of a comparative literature review, with an analysis of the papers retrieved in terms of their theoretical approach, context, study population and research method.

**Findings** – Curiosity is understood as a multi-faceted cognitive trait in humans and the relationship to information-seeking behaviour is explored through an exploration of other personality characteristics. There is very little citation of the information science literature in the psychological papers, and only a little more citation of the psychological literature in the information science papers.

**Originality/value** – The author is not aware of any similar exploration of the literature on curiosity.

**Keywords** Psychology, Literature review, Information science, Information behaviour, Information-seeking, Curiosity

**Paper type** Article

## 1. Introduction

Curiosity has been part of the human psychology since the first hominids began to think. [Scrivner \(2021\)](#) suggests that curiosity evolved in humans as a mechanism to help evaluate possibly dangerous situations. However, curiosity seems to have appeared in the evolutionary process much earlier than in humans, since studies show that mammals other than man possess curiosity, including our *cousins*, the great apes ([Glickman and Srogos, 1966](#)), and that it also exists in birds ([Winkler and Leisler, 1999](#)). Thus, it may be regarded as a general trait in animals of many kinds that motivates a search for more *information* about external phenomena.

The actual word, or, rather, a local language equivalent may not have existed, but for example, in the Sumerian [The epic of Gilgamesh \(2003\)](#), dating from around 2,000 BC, Gilgamesh, king of Uruk, undertakes a journey to discover the secret of eternal life, seeking information, in other words, to satisfy his curiosity. As we might expect, the Greek

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philosophers had something to say about curiosity. For example, in *Plato's Republic* (1998) Socrates proposes that a love of learning makes a philosopher and Glaucon says, “*If curiosity makes a philosopher, you will find many a strange being will have a title to the name. All the lovers of sights have a delight in learning, and must therefore be included*” (p. 659) and Socrates replies that true philosophers are “*lovers of the vision of truth*” (p. 659).

In more recent times researchers suggest that curiosity drives creativity (Gross *et al.*, 2020), leads to problem-solving (Hardy *et al.*, 2017), and assuming our curiosity is satisfied in a positive way, it can increase our happiness and feelings of well-being (Gallagher and Lopez, 2007). We think of curiosity, as a general human trait that drives us to find out more about events, phenomena, ideas, that pique our interest or create anxiety. However, the second paper cited above has the term *epistemic curiosity*, which makes us curious about what other kinds of curiosity there may be and what, exactly, is epistemic curiosity.

Psychologists have identified a number of forms of curiosity. *Epistemic curiosity* (Berlyne, 1954) can be defined as a general desire to know, to acquire knowledge and information. Hardy *et al.* (2017) define two types of epistemic curiosity, which they term *diversive curiosity*, “*which refers to curiosity associated with the interest to explore unfamiliar topics and learn something new*”, and *specific curiosity*, “*which refers to curiosity associated with the desire to reduce uncertainty and resolve gaps in one's understanding*” (p. 231). Both of these types seem to have things in common with what has been called *intrinsic curiosity*, that is, an innate drive to seek out information, while *extrinsic curiosity* requires some kind of reward, or some external outcome that is desired. *Perceptual curiosity* was defined by Berlyne (1954) as “*The curiosity which leads to increased perception of stimuli . . .*” (p. 180), such as the interest in new things drawn to the attention of one's senses.

Curiosity has also been categorised as *state curiosity*, that is, a temporary state of curiosity occasioned by some novel or ambiguous stimulus, and *trait curiosity*, which is a relatively stable feature of personality, which can be characterised as having a general interest in learning new things (Loewenstein, 1994).

These various forms of curiosity would all seem to involve information-seeking behaviour to some extent, and for *epistemic curiosity*, it is central to the definition. However, even for *state curiosity*, which is essentially temporary, searching for information to satisfy the curiosity aroused by the stimulus is probable. And the interest in new things caused by *perceptual curiosity*, may only be satisfied by searching for information. Of course, when we use the term *information* we do not mean only some informative text; for example, if an object arouses our perceptual curiosity, we may search for similar objects that provide us with further information on objects of that type. Information is also central to Loewenstein's (1994) theory of curiosity, since he proposes that curiosity arises, “*when attention becomes focused on a gap in one's knowledge. Such information gaps produce the feeling of deprivation labeled curiosity. The curious individual is motivated to obtain the missing information to reduce or eliminate the feeling of deprivation*” (p. 87). Loewenstein's theory has become influential in psychological research, having been cited more than 3,000 times, according to Google Scholar (see, for example, Shin and Kim, 2019; Liquin and Lombrozo, 2020; Jirout, 2020).

The aim of this paper is to review the psychological research on curiosity and information-seeking, to compare it with the smaller number of papers in information science, and to determine the extent to which research interests overlap. What lessons might be learnt by information scientists from the psychological research, and vice-versa, will also be discussed. Finally, the extent to which each field cites the other will be explored.

Given that the term *information seeking behaviour* was used by psychologists some years before Wilson (1981) introduced it to information science, and given that *curiosity* is employed as a key variable in that earlier research, it seems reasonable to suggest that information scientists might have something significant to learn from a further examination of the association between curiosity and information seeking in the psychological literature.

## 2. Method

Curiosity has been extensively studied by psychologists, but less so in information science. Initially, a search in Web of Science for papers in information science, using the search strategy “curiosity” AND “information seeking”, found 40 papers; however, when the abstracts were surveyed eleven were found to be irrelevant for a variety of reasons, such as not being published in information science journals, and not dealing with curiosity as a research concept, but simply noting its existence. This left 29 publications for further examination: eighteen publications were papers in journals, nine were dissertations (eight doctoral and one master’s), and two were conference papers. The journals in which papers appeared are shown in Table 1. No attempt was made to identify alternative formulations of either curiosity or information-seeking (e.g., information behaviour, or information need), simply because my interest was in the association in the literature of these two terms.

In contrast, the psychological literature, using the same search strategy, yielded 272 items. However, many of these papers did not meet the selection criteria, as they only briefly mentioned curiosity or information-seeking without these being the main focus. Additionally, some journals were not within the psychology field. To refine the search, all subject fields other than psychology, behavioural sciences, psychiatry, and educational psychology were excluded. This resulted in 84 relevant papers. Table 2 shows the sources with multiple papers: 42 papers were published in 14 sources, 19 were dissertations, and the remaining 23 were published in 23 journals.

Table 3 shows the distribution of the papers by the country of the authors, thus, the eighty-four papers have a total of 107 authors. The dominance of the USA is clear, with more than half of the authors being from this country.

Figure 1 shows the time distribution of papers, revealing recurring interest in the subject rather than steady growth. There are peaks of interest followed by declines in subsequent years. A significant surge occurred in 2019, followed by a possible decline in 2022 and 2023. However, even in July 2023, the number of papers published remains higher than in the years before 2019. This peak of interest could be attributed to the increasing role of the internet and social media in information seeking, which can be confirmed through further analysis of the papers.

## 3. The psychological perspective on curiosity and information-seeking

As noted above the psychology sample consisted of 84 publications; however, examination of the actual documents revealed that ten of these had been selected from Web of Science simply

Journal title	No. of papers
<i>Information Research</i>	3
<i>Journal of Documentation</i>	3
<i>Journal of Academic Librarianship</i>	2
<i>Library and Information Science Research</i>	2
<i>Aslib Journal of Information Management</i>	1
<i>Electronic library</i>	1
<i>International Journal of Information Management</i>	1
<i>Information Processing and Management</i>	1
<i>Journal of Information Science</i>	1
<i>Journal of the Korean Library and Information Society</i>	1
<i>Library Hi-Tech</i>	1
<i>Portal-Libraries and the Academy</i>	1

Source(s): Created by the author

**Table 1.**  
Information science  
journals

**Table 2.**  
Sources of the  
psychology papers

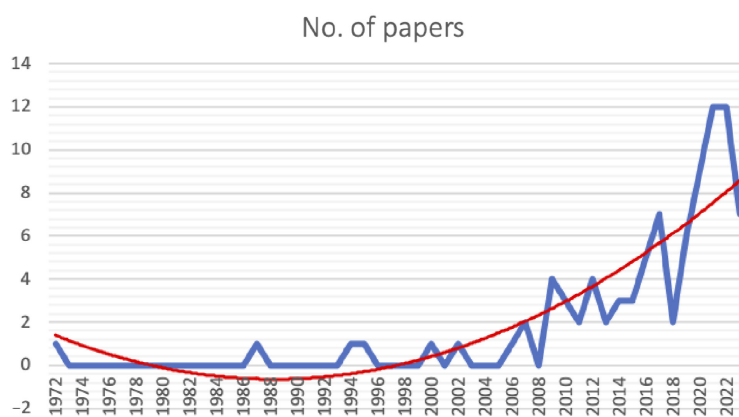
Source title	No. of papers
<i>Personality and Individual Differences</i>	6
<i>Journal of Experimental Psychology - General</i>	5
<i>Educational Psychology Review</i>	4
<i>Journal of Research in Personality</i>	4
<i>Cambridge Handbook of Motivation and Learning</i>	3
<i>Cambridge Handbooks in Psychology</i>	3
<i>Psychological Research</i>	3
<i>European Journal of Personality</i>	2
<i>Frontiers in Psychology</i>	2
<i>International Journal of Behavioral Development</i>	2
<i>Journal of Behavioral Decision Making</i>	2
<i>Journal of Educational Psychology</i>	2
<i>Journal of Experimental Social Psychology</i>	2
<i>Psychological Science</i>	2
<i>Total</i>	42
<b>Source(s):</b> Created by the author	

**Table 3.**  
Countries of the  
authors

Country of author(s)	No.
USA	55
The United Kingdom	10
Canada	8
Australia	6
Germany	5
Japan	4
The Netherlands	4
Israel	3
China	3
South Korea	2
France	1
Hong Kong	1
India	1
Pakistan	1
Spain	1
Switzerland	1
Turkey	1
<i>Total</i>	107
<b>Source(s):</b> Created by the author	

because of the occurrence of the terms *curiosity* and *information-seeking*, but did not actually deal with these concepts to any significant extent. For example, one concerned the behaviour of psychoanalysts, another online fashion retailing, and a third the use by college students of websites related to anorexia and bulimia. In addition one dissertation was not available from the relevant university and a second was embargoed until 2025. The remaining documents, however, provide us with a useful sample for our intended study, and what follows is based on a reading of 72 publications and two abstracts.

The reviewed publications reveal a complex set of associations between curiosity and information-seeking: the psychological factors involved include motivations, cognitive processes, emotions, and personal traits. Thus, in relation to personal traits, research on



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Figure 1.  
Distribution of papers  
over time

openness by [Jach and Smillie \(2021\)](#) found that, while openness as a whole did not predict information-seeking, *trait curiosity* (seen here as a feature of openness) did predict seeking *non-instrumental* information, that is, information that could not affect the outcome of the experiment on which the study was based.

In another study [Liquin and Lombrozo \(2020\)](#) note that, “*Much of human learning, from childhood through adulthood, is achieved by asking questions. Children begin to ask information-seeking questions before the age of two, and they ask increasingly more explanation-seeking questions (often ‘why’ questions) between the ages of two and three . . .*” (p. 1). The authors found that explanation-seeking questions support learning about the problematical situation and also the potential, generalised use of the information gained in other situations. The latter is described as “*learning for export*” (p. 2).

Curiosity may be driven by emotional responses: for example, [Huang et al. \(2021\)](#) explored how anxiety affected interpersonal curiosity (that is, curiosity about other persons) in the context of the COVID-19 pandemic. The researchers found that “*When the mediators were analyzed, what was concurred to be of significance, was that through interpersonal distancing during quarantine, state anxiety was an indirect predictor of interpersonal curiosity . . .*” (p. 6).

[Jach et al. \(2022\)](#) propose a model, derived from the existing literature, that links personality traits to motives for information-seeking, specifically, non-instrumental information, which carries no specific benefit to the person. The model has two pathways: “*one characterized by the motivation to explore the unknown, and one characterized by the motivation to seek safety*” (p. 936). Following two experimental studies the authors conclude that “*non-instrumental information-seeking paradigms can be perceived differently and that preferences for information are different in different tasks and correlate with different personality traits*” (p. 953).

Morbid curiosity is attention to unpleasant things, which [Zuckerman and Little \(1986\)](#) suggest is based on a “*biologically based need for novel stimulation and arousal*” (p. 49). [Scrivener \(2021\)](#) found that “*morbidly curious participants were more likely to be fans of movies and TV shows where threat was a central theme . . .*” and that individuals “*who scored high in trait morbid curiosity were more likely to gather more information about morbid phenomena*” (p. 8). [Harrison and Frederick \(2022\)](#) studied morbid curiosity in college students, and suggest that “*we are motivated by a protective vigilance to attend to that which can harm us*” (p. 3775). The authors found that “*men had more morbid curiosity than did women*” (p. 3772) and also that men had higher sexual curiosity. However there were no differences between men and

women “*in sensation seeking . . . ; in interest in the topic of serial killing . . . alone; in morbid psychology topics (serial killing included) . . . ; in non-morbid psychology topics . . . ; or in mean interest in all topics . . .*” (p. 3772). Harrison and Frederick also identify sensation-seeking as a motivator of morbid curiosity (p. 3771).

Among other personal characteristics age is a factor that affects curiosity. However, the notion that curiosity declines with age is challenged by the research by [Tedeschi \(2020\)](#) and [Chu \(2020\)](#). Tedeschi found that “*Overall, the lack of age-related decreases in curiosity in our data is at odds with the predictions made by Sakaki and colleagues (Sakaki et al., 2018), that curiosity would decline with age due to changes in dopaminergic functioning and reward processing*” (p. 87), while [Chu \(2020\)](#) shows that the relationship between age and curiosity is much more complex than a simple association, with affective factors and personal relevance having a relationship. Chu shows that for some types of curiosity and for some contexts age may change the character of curiosity, but not its existence.

Turning to cognitive factors, [Gross et al. \(2020\)](#) shows that curiosity enhances cognitive engagement (i.e., the willingness to be seriously engaged in a task), while [Brooks et al. \(2021\)](#) show that information-seeking, driven by curiosity, is associated with improved attention and memory. They find that a failure to recall something from memory stimulates curiosity and resultant information search and that this process results in lasting memory improvement. [McNeely-White \(2022\)](#) also considered failure to recall from memory, which she described as the metacognitive state of tip-of-the-tongue. She notes that,

a key component in whether one feels a sense of curiosity for a piece of missing information is feelings of closeness. As the individual detects that they are closer to accessing the needed information, they become more curious and thus more likely to engage in information-seeking . . . (p. 16)

McNeely-White also considered the role of feelings of *déjà vu* and *déjà entendu*, concluding that both of these metacognitive states “*may be adaptive in that they encourage additional search efforts, both internal and external*” (p. 141). Later, [McNeely-White and Cleary \(2023\)](#) carried out further experiments and confirmed the relationship, noting that “*participants provided the highest curiosity ratings while experiencing déjà vu or déjà entendu, which subsequently lead them to be more inclined to use limited resources to uncover relevant information*” (p. 38).

External factors may also influence curiosity-driven information seeking, for example, [Lang et al. \(2022\)](#) considered how *temporal statistics* (i.e., the time taken to discover relevant information – or, in this experiment, the time taken to deliver the information to the participant) affected information seeking and memory of the retrieved information. They conclude:

When the presentation of information followed a uniform temporal distribution, participants were more persistent in waiting for information, had better memory for answers, and responded with relatively less pupil dilation when the answer appeared. By contrast, when the timing of answers followed a heavy-tailed distribution, participants were less likely to wait for answers and less likely to remember them, and showed a greater spike in pupil size when the answer appeared (p. 992).

Surprise and novelty are also externally related phenomena that pique a person’s interest (or arouse their curiosity) and motivate them to seek information. More than 100 years ago [William James \(1918, p. 30\)](#) pointed out that, “*Already pretty low down among vertebrates we find that any object may excite attention, provided it be only **novel**, and that attention may be followed by approach and exploration by nostril, lips, or touch*”. More recently, [Liquin \(2021\)](#) noted the role of novelty and surprise in stimulating curiosity and leading to *explanation-seeking*, but found that factors associated with the potential benefits of the anticipated explanation were better predictors of explanation-seeking search. Further support for this finding is found in [Liquin and Lombrozo \(2020\)](#).

The role of novelty was also considered by [Sehl et al. \(2022\)](#) who researched what choices children made, finding that “*Children preferred novelty when choosing what to learn about, but mostly favored familiarity when choosing what they would rather have*” (p. 2295). The experiment was repeated with adults, with the same result.

The significance of Loewenstein’s *information-gap theory* (1994) has been mentioned earlier and several of the publications in the sample used the theory (although *knowledge gap* is often used as an alternative), for example, [Litman \(2000\)](#) found support for the theory in relation to epistemic curiosity, but not for perceptual curiosity. [Kenett et al. \(2023\)](#), referring to Loewenstein argue “*that creativity and aesthetic experiences can be understood more fully by considering curiosity because they are exemplars of situations that highlight gaps in knowledge or require exploration to identify problems and solve them*” (p. 412). [van Dijk and Zeelenberg \(2007\)](#), used the information-gap theory in a study of decision making under uncertainty. They note that, “*after having made a decision, people may block out information that might indicate that they made the wrong decision*” (p. 599) and tested this proposition experimentally. They found that the proposition was not supported and conclude:

When asked in 1924 why he wanted to climb Mount Everest, George Mallory replied “Because it’s there”. In a way the behavior of our participants provides a similar answer to the question of why people may want to know counterfactual outcomes even if this may reveal that they made the wrong decision. When knowledge is already out there and counterfactual outcomes are already determined, curiosity may win it from the earlier documented preference not to know ([Wicklund and Brehm, 1976](#)) (p. 660).

In a theoretical paper [Golman and Lowenstein \(2018\)](#) carried out further development of the information-gap theory, proposing a *theory of preferences* for acquiring or avoiding information. They argue that, “*When anticipated answers are neutral or even potentially positive, information should be sought . . . However, when anticipated outcomes are sufficiently negative, information would be avoided*” (p. 155–156).

[Loewenstein \(1994\)](#) also suggest that curiosity could arouse pleasurable feelings in anticipation of receiving relevant information, or feelings of deprivation as a result of being unable to access information. [Litman and Jimerson \(2004\)](#) label these differences *curiosity as a feeling of interest* and *curiosity as a feeling of deprivation*. In their study, aimed at developing an instrument to measure curiosity as a feeling of deprivation, they found three explanatory factors: “*(a) a need to feel competent, (b) intolerance experienced when information is inaccessible or inadequate, and (c) a sense of urgency to solve problems*” (p. 147). The authors do not pursue the information-seeking consequences of these factors, but in a later paper [Litman \(2007\)](#) suggest that because deprivation-type curiosity, “*involves an unsatisfied need-like state, it is hypothesised to correspond with more intense experiences of curiosity than [interest-type] curiosity, and therefore motivate more information seeking*” [p. 149].

### 3.1 Citing the information science research

As we suggest below, the extent to which information science has considered the role of curiosity in information-seeking is rather limited, and it will not surprise readers that there is very limited citation of information science literature in the psychological literature sampled here. In fact, only four of the eighty-four documents cited information science research. These were:

[Hertwig and Engel \(2016\)](#) cited [Case et al. \(2005\)](#),

[Mechera-Ostrovsky et al. \(2023\)](#) cited [Kuhlthau et al. \(2008\)](#),

[Shin and Kim \(2019\)](#) cited [Bowler \(2010\)](#), and

[Sweeny and Miller \(2012\)](#) cited [Case et al. \(2005\)](#), and [Wilson \(1999\)](#)

The reasons for citing these information science papers are not difficult to determine. The paper by Case *et al.* concerns information avoidance, and both of the citing papers also deal with this topic. The paper by Kuhlthau *et al.* is a review of the continuing validity of Kuhlthau's information search process and occurs in the citing paper in the context of the emotional context of information seeking. Bowler's work, based on her Ph.D. thesis on metacognition, could well have been published in a psychology journal and is cited in the context of the debate over whether curiosity and interest are distinct psychological processes or simply different names for the same phenomenon. Wilson's paper is cited, along with several others, as an example of a model of information seeking.

We can also suggest that psychology presents a well-grounded, coherent body of research that deals with mental phenomena, and which has within all the necessary resources (in the shape of theories, and experimental methods) for exploring these phenomena. It also has a longer history than information science, being founded as a scientific discipline through the work of Wilhelm Wundt in setting up the first laboratory for psychological research at the University of Leipzig in 1879 (Wikipedia, 2023). Where support from elsewhere is sought, it is from neuroscience, where the neurological processes underlying psychological phenomena are researched. There is limited need, therefore, to seek support from the information science literature, except where the research (such as Bowler's) has a strong relationship to existing psychological research.

#### 4. The information science perspective on curiosity and information-seeking

The earliest source found was a doctoral dissertation (Yoon, 1992), which identified curiosity as a feeling experienced by information seekers. No analysis of curiosity was undertaken and there was no attempt to distinguish among the types of curiosity described in the Introduction, above. However, the author found that 81% of her respondents expressed feelings of curiosity "*when faced with important information needs*" and 47% felt curiosity strongly (p. 127). This feeling varied with the age of respondents: "*The younger people were the more likely they were to feel curious*" (p. 129). There was no further analysis of curiosity and no consideration of any relationship to different information needs or different modes of behaviour. Given that the concept was linked to specific information needs, we can probably assume that *specific epistemic curiosity* was involved in this case.

In another doctoral dissertation, Woo (2002) researched the information-seeking behaviour of older people "*who exhibit a passion to continue learning and display an intellectual curiosity about [the larger world] beyond their small world of daily activities*" (p. 65). Woo found that, for respondents to her questionnaire, "*Their passion to learn and intellectual curiosity were the driving forces in their attitude toward learning and seeking information*" (p. 145). As in the previous example, there was no further analysis of curiosity, and no citations to research on curiosity, but the descriptions throughout the dissertation would suggest that this is *diversive curiosity*, or in other terms, *intrinsic* or *trait* curiosity. The type of curiosity involved, however, is not entirely clear as part of study involved presenting respondents with scenarios that could prompt *specific curiosity*.

Curiosity was not initially identified as a variable in a doctoral study on Web browsing (Ahn, 2003), but emerged from the talking-aloud phase of the investigation. Thereafter, the concept is used in analysis, but there is no attempt to specify the type of curiosity and no citation of relevant curiosity research in psychology.

Bowler (2008, 2010) focuses on the metacognitive knowledge of adolescents during the information search process. Metacognitive knowledge is defined as, "*knowledge about cognition in general as well as awareness of and knowledge about one's own cognition, the cognitive demands of a task and the strategies to employ when unsuccessful*" (Bowler, 2008: p. 1). *Understanding curiosity* was one of thirteen categories of metacognitive knowledge and was defined as, "*Regulation of the conflict between the need to discover versus the need to fulfill the requirements of the information task*" (Bowler, 2010: p. 33). In this way *understanding*



*curiosity* was related to other categories, for example, *balancing*, or determining when a search had retrieved enough information to satisfy the need against continuing to satisfy the initial curiosity. The author suggests that knowledge of this balancing act can be used by librarians working with students to ensure that they become aware that “*unrestricted curiosity in the topic can also be dangerous to the search process*” (Bowler, 2010, p. 40). Although the author does not specify the type of curiosity involved it would appear that epistemic curiosity would be appropriate. As in the case of the two previous examples, there are no references to the psychological literature on curiosity.

Curiosity as a motivator of information-seeking has been considered by a number of researchers. For example, Savolainen (2008) found that information seeking driven by *autonomous motivation*, for example, curiosity and personal interest, was experienced as interesting and enjoyable, while seeking driven by *controlled motivation*, such as needing to satisfy some external requirements was stressful. Yoon (2011) explored college students’ search for images and found that students searched for images, such as “out of curiosity”. Grasso (2014) found that health-information seeking was associated with individuals seeking information to satisfy their curiosity about a health issue. Curiosity was defined in the questionnaire employed for data collection as a reason for reading, because “*the process and results might be interesting*”, or “*I would enjoy learning more about this topic*”, or “*The information on the report might be interesting*” (pp. 51–55). *Curiosity* was not further defined in these papers, nor were relevant psychological sources cited. Generally, however, the authors seem to have in mind epistemic or trait curiosity, although, in the case of Grasso, the sought information is seen as a reward of some kind – enjoyment or interest is aroused – and in such as case *extrinsic curiosity* might be appropriate.

#### 4.1 Citing the psychological research

After an initial scan of the abstracts eleven were rejected as not related to curiosity or not information science sources, leaving a total of twenty-nine publications. The reference lists of these publications were reviewed, sources in the area of psychology were extracted, and 243 references were recorded in an Excel database. The extent to which psychological sources were cited clearly related to the significance of psychological concepts in the research. Thus, citations varied from zero to forty-four (in a doctoral dissertation).

Twenty-seven references were to a total of twenty books, none of which was cited more than twice. Those cited twice are listed in Appendix 1. Thirty-two references were to twenty-three chapters in books; none was cited more than twice and those are listed in Appendix 2.

The remaining 184 references were to papers in psychology. The thirty-five journals cited more than once are listed in Appendix 3, while those cited five times and more are listed in Table 4: these may be considered the journals to review regularly if you are interested in psychological research on information-seeking behaviour.

Journal title	Times cited
<i>Personality and Individual Differences</i>	14
<i>Psychological Bulletin</i>	13
<i>Journal of Personality and Social Psychology</i>	11
<i>American Psychologist</i>	8
<i>Journal of Personality Assessment</i>	7
<i>Media Psychology</i>	7
<i>Cognition and Emotions</i>	5
<i>Contemporary Educational Psychology</i>	5
<i>Educational Psychology</i>	5
<i>European Journal of Social Psychology</i>	5
<i>International Journal of Aging and Human Development</i>	5

**Table 4.**  
Psychology journals  
cited five times or more  
by information science  
authors

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A total of 36 individual papers were cited more than once, but none was cited more than three times. These were:

Anderson and Gerbing (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.

Litman (2005). Curiosity and the pleasures of learning: Wanting and liking new information. *Cognition and Emotions*, 19(6), 793–814.

Litman and Jimerson (2004). The measurement of curiosity as a feeling-of- deprivation. *Journal of Personality Assessment*, 82(2), 147–157.

Ryan and Deci (2000). Intrinsic and extrinsic motivations: classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54–67.

J.A. Litman (<http://drjlitman.net>) was also the first author of ten papers cited once or twice, making him the most cited author in this set of references, and, for those with a continuing interest in the subject, one to follow.

## 5. Discussion

The review of the literature of curiosity and information seeking reveals the complexity of curiosity and the efforts made to identify and measure different types of curiosity. The factors that affect the emergence and consequences of curiosity are many and varied and range from personality traits, through metacognitive factors, emotions, experiences of novelty and surprise, and various contextual or situational phenomena. It also shows that information-seeking is rarely a major concern of the research; rather it appears simply as a consequence of curiosity and is rarely pursued further than recognising its existence.

Psychology has been modelled on the positivist sciences ever since Wundt established his experimental laboratory in 1879 and this results in the experiment being the primary research method. Indeed in his account of the development of the laboratory Wundt noted, “*The relationship of experimental psychology to the neighbouring scientific fields, especially to physics and physiology, means that a large part of the instruments at its disposal are shared with them*” (Wundt, 1910). A significant element of experimental method is the development of research instruments for the measurement of curiosity. As examples, Litman’s dissertation (2000) reviewed a number of these; Litman and Pezzo (2007) devised a scale for interpersonal curiosity; and Kashdan *et al.* (2009) devised a scale for the measurement of trait curiosity.

A consequence of the experimental method is that the information-seeking element of the experiments rarely takes place in real-world situations. Rather, the participants are presented with the opportunity to access previously prepared materials and the measure of information-seeking is the extent to which they do or do not take advantage of their availability.

The information science research, on the other hand, is more often qualitative, rather than experimental, and involves the use of questionnaires and interview schedules and, in some cases, observation, thinking aloud, and in more recent times, eye-tracking. The participants are generally some category of persons of relevant to the research; for example, migrants, new mothers, scientists, business managers, and so on, and the research often takes place in their settings, rather than in a laboratory. The investigator is generally interested in what sources of information the person seeks, what they find, and how they use that information. These are questions that seem to be excluded by the experimental methods of the psychologist.

It is notable that the earlier work in information science on curiosity and information seeking rarely cited the psychological research. Only the later papers from about 2000 onwards paid much attention to that literature and only one or two used psychological theory on curiosity in their research. It is clear, however, that the two communities have something to learn from one another. Information scientists would benefit from being able to undertake

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experimental research and to draw upon the concepts developed by the psychologists. The scales developed by psychologists could also be of value to information scientists and, perhaps, could be adopted directly into information behaviour research. At the very least, they could be tested, and could reveal associations between information-seeking and psychological concepts.

On the other hand, the psychologists might find the broader range of research issues undertaken in information behaviour research of interest in extending the scope of their research beyond the research laboratory.

To some extent, the lack of collaboration between the two communities is explained by their different interests and approaches: the psychologist is concerned with the actions of the mind, while the information scientist is interested in the wider social and societal consequences of information-seeking behaviour. There also appears to be a significant theoretical difference in that, for the information scientist, *information need* replaces the concept of *curiosity*. Indeed, given Berlyne's (1954) definition of epistemic curiosity as the type whose "*main fruits are knowledge*" (p. 180), knowledge must be gained by seeking information, and we can consider that epistemic curiosity generates an information need. Perhaps what kind of curiosity motivates the information-seeking is irrelevant for information science. This close association between epistemic curiosity and information need may explain why curiosity figures so rarely in information behaviour research and does not appear in any of the widely used models of information behaviour by Dervin (1992), Ellis (1993), Kuhlthau (2004), Savolainen (1995), and Wilson (1981, 2022).

While the information behaviour researcher may benefit from taking a closer look at the psychological literature, it should be approached carefully. For example, the distinction between *curiosity as a feeling of interest*, and *curiosity as a feeling of deprivation* (Litman and Jimerson, 2004), seems to have acquired a degree of support in psychology (see, for example, Ryakhovskaya *et al.*, 2022; Silvia, 2012). However, it is also accepted that curiosity and interest are different phenomena (Pekrun, 2019; Donnellan *et al.*, 2022), so to describe one variety of curiosity as being a *feeling of interest* simply becomes confusing. How can curiosity be a feeling of interest if the two concepts differ in character? To describe curiosity as a feeling of deprivation also seems odd: one can imagine that a feeling of being deprived of information will stimulate information-seeking, but why would it be necessary to bring in the concept of curiosity? Say that I have a need to solve a problem – it is not curiosity that motivates me to seek information, but simply the pressing need for a solution, and I am only *deprived* of information if, in the course of my search, I am prevented from acquiring the necessary information. This ties into the relationship between curiosity and information need. It seems that information science has not used curiosity as a theoretical variable in research simply because information need serves that purpose. This is not to infer that *curiosity = information need*, since the position in psychology is that curiosity is a fundamental human cognitive trait that results in information need to satisfy the curiosity. In information science, by contrast, research often takes place in the context of problematic situations which information is needed to resolve. Information need is thereby associated with the problematic situation rather than the fundamental trait of curiosity.

As far as citation practice is concerned, it is evident from the results that information scientists are more likely to cite the psychological literature than psychologists are to cite the information science literature. However, the basis for this proposition consists of so few documents that it should not be regarded as the final word on the subject. The reason for the difference has been suggested earlier: psychology is, in effect, a rich, self-contained discipline such that psychologists can find theories, methods, and tools, without going beyond their disciplinary boundaries. We may say that they have less to learn from the information science literature than information scientists have to learn from psychology.

## 6. Conclusion

Curiosity is said to have “killed the cat” and it is certainly true that many felines die as a result of explorations that take them into danger. However, whatever dangers it may bring, curiosity appears to be a common trait in human beings and in many other animals. Psychologists are interested in curiosity because it seems to be a trait that results in different kinds of exploratory actions. If we come across something novel or surprising, which is actually capable of being directly explored, our first reaction will probably be to investigate it in much the same way as any other curious animal. We may pick it up, smell it, try to take it apart, perhaps even lick it to determine its taste. If these explorations fail we may go on to seek information about it; our difficulty, if we don’t know anything about it, will be formulating some kind of search strategy. Our first action will probably be to ask someone about it and then engage in more time-consuming searches. Of course, today, there are apps for my phone that help with identification of, for example, plants and birds. I can record the song of a bird with BirdNET (<https://birdnet.cornell.edu/>), and it tells me, almost immediately, that the bird is a wren. Or I can take a picture of a leafy shrub and PlantNet (<https://plantnet.org/en/>) tells me it is Black Bamboo.

Psychology and information science are interested in different aspects of the information-seeking process. The psychologist is interested in the relationship between information-seeking and other psychological characteristics, for example, as McNeely-White (2022) explored the relationship between information-seeking and feelings of *déjà vu*, and failure to recall information from memory. In brief, they are concerned with the actions of the mind.

Information behaviour research, to a large extent, however, is concerned with the behaviour of the person in their life-world when in search of information, with the sources they employ, how they formulate search strategies for search engines, how they use the information they find, how they discriminate between factual information and misinformation, how information is shared, and how it contributes to problem-solving, decision-making, and simply living one’s life. This is not to say that all information-seeking research is of this kind: some researchers do have an interest in the mental processes behind the formulation of information needs (e.g., Cole, 2012; Wilson, 2022).

This is not to say that the two disciplines have nothing to learn from each other. We have already noted the use of the experimental method and the development of measurement scales by the psychologists. Information science might benefit by importing some of this experience. On the other hand, psychologists might learn from the findings of information behaviour research, how curiosity, through information-seeking, ultimately leads to an understanding of how curiosity is satisfied.

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## Appendix 1

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## Appendix 2

### Chapters in psychology books cited by information science authors more than once

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**Appendix 3**  
**Psychological journals cited more than once by information science authors**

Journal title	Times cited
<i>Personality and Individual Differences</i>	14
<i>Psychological Bulletin</i>	13
<i>Journal of Personality and Social Psychology</i>	11
<i>American Psychologist</i>	8
<i>Journal of Personality Assessment</i>	7
<i>Media Psychology</i>	7
<i>Cognition and Emotions</i>	5
<i>Contemporary Educational Psychology</i>	5
<i>Educational Psychology</i>	5
<i>European Journal of Social Psychology</i>	5
<i>International Journal of Aging and Human Development</i>	5
<i>British Journal of Educational Psychology</i>	4
<i>Journal of Applied Psychology</i>	4
<i>Personality and Social Psychology Bulletin</i>	4
<i>Personality and Social Psychology Review</i>	4
<i>Perspectives on Psychological Science</i>	4
<i>Psychological Review</i>	4
<i>Advances in Experimental Social Psychology</i>	3
<i>International Journal of Behavioral Development</i>	3
<i>Journal of Social and Personal Relationships</i>	3
<i>Learning and Individual Differences</i>	3
<i>Psychological Science</i>	3
<i>Annual Review of Psychology</i>	2
<i>British Journal of Social Psychology</i>	2
<i>Journal of Anxiety Disorders</i>	2
<i>Journal of Applied Social Psychology</i>	2
<i>Journal of Community and Applied Social Psychology</i>	2
<i>Journal of Environmental Psychology</i>	2
<i>Journal of Experimental Child Psychology</i>	2
<i>Journal of Experimental Psychology: Human Perception and Performance</i>	2
<i>Journal of Personality</i>	2
<i>Psychological Research</i>	2
<i>Psychology and Aging</i>	2
<i>The Gerontologist</i>	2
<i>Trends in Cognitive Sciences</i>	2

**Table A1.**  
Psychological journals  
listed more than once  
by information science  
authors

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