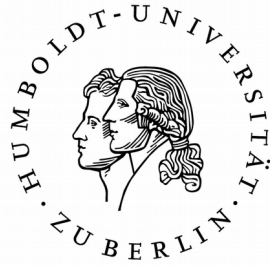


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HOW IS INFORMATION AVOIDANCE CURRENTLY
UNDERSTOOD AND RESEARCHED?

VON
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Abstract:

Information Avoidance (IA) is an important aspect of human Information Behaviour, which is far less often studied than its counterpoint Information Seeking. Despite this, multiple overviews exist (e.g. Sweeny et al. 2010; Manheim 2014 or Golman et al. 2017), though there is no current overview within Information Science. Thus this thesis combines research from communication, psychology, economics, health and information science, to create an overview of common theories, research-methods, reasons and appearances of IA behaviour. It closes with an overview of still open questions. This thesis found that the definition of IA varied widely between researchers, to the extent that a single definition would be impossible to create. However some trends could be identified: IA became more commonly assumed to be predicted by situations, instead of traits. More and more researchers began to understand it as neutral behaviour, instead of a solely negative one. Topics formerly belonging to other non-seeking-behaviour (e.g. Information Overload or Satisficing) were researched as aspects of IA. Finally while many research areas (e.g. psychology, communication) combined their knowledge, many more could benefit from doing so. There were also still mostly unexplored topics. These were positive IA, temporal IA, as well as IA Behaviour by groups or animals.

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Introduction

Information Avoidance (IA) has become as a research-topic more and more relevant in recent years. Scholars out of different areas, including communication, psychology, economics, health and information science have studied it (e.g. in communication: Jang 2014; Carcioppolo et. al. 2016; Bode et. al. 2017; Song 2017, in psychology: Sweeny et. al. 2010; Fleurkens et. al. 2014; Vrinten et. al. 2018; Howell et. al. 2019, in economics: Bénabou 2013; Huck et. al. 2015; Andreoni et. al. 2017; Freddi 2017; Golman et. al. 2017, in health science: Eriksson and Helgesson 2005; Gaspar et. al. 2016; McCloud et. al. 2017 and in information science: Case et. al. 2005; Manheim 2014; Savolainen 2014; Addison 2017). Note though, that these associations are somewhat fluent. E.g. Vrinten et. al. (2018) published in “Psychology and Health” and Carcioppolo et. al. (2016) in the Journal of Health Communication, which are both not distinctly assignable. Also are often not all authors from an article from the same area of study. So worked on Menon et. al. (2006) two authors from economics and one psychologist. Similar in Bode et. al. (2017) where the first two authors, Bode and Vraga, are from communication research, while the last, Troller-Renfree, is another psychologist.

However, in information science there is no recent literature review about this topic. While Golman et. al. published 2017 their overview “Information Avoidance”, this work, despite excellent, is still rooted in economic understanding of IA. As explored later, it has some notably differences to the understanding of information science, (some strings of) psychology and health care. For information science itself, the most recent overview would be Manheim's article about information non-seeking-behaviour from 2014. In it, Manheim separates research trends on non-seeking-behaviour, a framework meant to capture all behaviour intended to hinder or avoid ones own knowledge gain, into satisficing, information overload and IA. However more recent research trends in IA tend to a more inclusive definition of it (e.g. Fleurkens et. al. 2014; Addison 2017; Bode et. al. 2017 and Song 2017). Consequently Manheim's framework is more and more in need of revision, as IA starts to incorporate research and aspects of information overload and satisficing into itself. Lastly, there is Sweeny et. al., which published their paper on IA 2010, which is still relevant as a baseline today. Yet, different authors, most notably Addison 2017, did expand upon Sweeny et. al.'s basic definition. Additional Sweeny et. al. did not include Golman et. al.'s economic definition and many of the theories they assumed to be applicable to IA have

been advanced in the recent years, thus making a new overview necessary.

Such a review is of even greater importance for Germany, which has neither Information Avoidance or avoidance, nor the German translations 'Informationsvermeidung' and 'Vermeidung' included in the last edition of the lexicon of library and information science (Umlauf and Gradmann 2011, 2014). Even in the articles about 'Informationssuche' (information seeking), 'Suchverhalten' (seeking behaviour) and 'Informationsverhalten' (information behaviour) the possibility of avoidance of information is not mentioned (Hobohm 2011b, 2011c; Luca 2014). Only 'Informationsüberlastung' (information overload) and 'Information Satisficing' (satisficing) possess their own entries, with information overload being caused by insufficient abilities and satisficing usually resulting in inferior results (Hobohm 2011a; Umlauf 2011). Reading the lexicon, it appears that IA on its own or for beneficial reasons is unthinkable, a notion that was even at the date of its composition questionable. Hence an overview, created at a German university, might be of special value.

To begin there are different areas under which IA has been classified. The first is the obvious (1) information seeking-behaviour, in which IA is defined as counter to the more normal information seeking behaviour. Under this negative definition IA was seen, especially in the past, as unhealthy or abnormal, but while most researchers have shaken this judgement, it can still be traced until now. Therefore most scholars of IA feel the need to proclaim their neutral viewpoint towards IA (e.g. Eriksson and Helgesson 2005; Sweeny et. al. 2010; Manheim 2014; Addison 2017, notably p. 144; Golman et. al. 2017, p. 124; Woolley and Risen 2018; Howell et. al. 2019, p. 153) and other research still sees sometimes behaviour rooted in avoidance as maladaptive or inferior to approach (Manheim 2014; Addison 2017, notably p. 138-140).

Consequently, there are more and more researchers which intend to separate IA from information seeking. They argue that IA can be found independently from information seeking, meaning not only that one can appear without the other, but that both have sometimes no direct or even a positive relation to each other (Jang 2014; Manheim 2014; Gaspar et. al. 2016, notably p. 542; McCloud et. al. 2017, p. 358; Song 2017). Therefore it should also be researched independently (Jang 2014; Manheim 2014; Song 2017).

Manheim (2014) is the most prominent one, having created an entire framework of (2)

information non-seeking-behaviour (in short non-seeking behaviour), under which avoidance behaviour can be categorised separately from seeking behaviour. Manheim identified three areas under which behaviour intended to reduce or avoid knowledge-gain were studied. Namely satisficing, focused upon premature ending of the seeking-process as well as source selection, information overload, concerned with filtering of information and when information becomes too much as well as Information Avoidance itself, which is mostly concerned with why and when people avoid a search altogether. While all three topics are important, this paper focuses solely on IA. However, in recent research, these areas have begun to intermingle, as IA becomes more emancipated from information-seeking behaviour and develops into its own research-area. Addison (2017) is a prime example, as she defines IA along a scale, which determines how intensive people avoid information, thereby completely disregarding Manheim's definition of information overload (which originally encompasses filtering) and IA (which is, according to Manheim, mostly focused upon complete avoidance) (Manheim 2014; Addison 2017, p. 126).

The last overarching area is (3) Avoidance literature, most prominent in psychological and medical research. Avoidance literature encompasses many different areas of affective, behavioural and cognitive research, which have only in common that something is being tried to be circumvented, instead of approached (Wiebe 2013, p. 169). Considering the wide scope of the avoidance literature, not all of its possible manifestations will be mentioned. Notable from an IA viewpoint are however topic avoidance and experiential avoidance. Both contain at least some findings that can be applied to IA. Topic avoidance encompasses the avoidance of topics in communication, either to avoid giving answers on certain topics or to gain answers on others. Hence, topic avoidance has some similar areas to IA, but it focus on the communication of information, rather than the information itself (Afifi and Afifi 2009, p. 489f.). Experiential avoidance refers to the avoidance of certain experiences, usually due to anxiety or fear. Since experiences can also be defined as information, experiential avoidance has many areas in common with IA (Chawla and Ostafin 2007). Additionally, experiential avoidance is closely linked to negative reinforcement, the idea that harmful behaviour is promoted due to its short time benefits (Boswell et. al. 2013, p. 1f.). A subcategory of experiential avoidance is the avoidance of trauma, as victims in many cases try to circumvent information that might remind them of

their trauma. Since such behaviour is often aversive to the healing process, there is a substantial amount of literature regarding it (however in this article only Fleurkens et. al. 2014 will be referenced).

IA refers to any behaviour intended to avoid information. There are two points of special relevance: intention and the assumptions on which information is based upon. Information in this context refers to knowledge that is at least suspected to be relevant, helpful or desirable to the recipient. Intention is the conscious aim to avoid this knowledge instead of the costs of the acquiring-process, thus always requiring knowledge of the availability of the information. The behaviour in itself is neutral, as it can be both beneficial as well as harmful.

IA has been defined in many different ways. Sweeny et. al. defined IA as “behaviour intended to prevent or delay the acquisition of available but potentially unwanted information” (Sweeny et. al. 2010, p. 341). According to them IA can be active or passive (based on whenever effort is needed to avoid the information), temporal or permanent (information acquisition might only be delayed), harmful or helpful (making the behaviour itself neutral) and concerned with both desired or undesired information (anticipation might be increased by avoidance of desired information) or information about others. Knowledge dismissal as well as interference avoidance are not IA, since the disregarded information was consciously explored first. However selective exposure is IA, since the decision to avoid is based upon assumed, instead of known content (Ibid., p. 341f.).

Manheim (2014) instead sees IA as complete avoidance of an information or the seeking process for it. However, Manheim does not define IA directly, but rather highlights that most researchers utilise it this way. The research is grounded in cost-benefit calculations in which the benefits of having an information are calculated against the threat it presents (instead of the cost of acquisition). Thus it is still based upon the assumption that knowledge, and such information, possesses inherent value, despite information overload theory showing the harmful effects knowledge can exhibit. The research is also often concerned with rational behaviour, intending to unravel in which situations seeking or avoidance would be superior. Manheim instead suggests to research IA in context of Information-non-seeking-behaviour, to find and understand the similarities and differences between satisficing, information overload and IA.

Golman et. al. represent the economic research perspective of IA and such their definition of it has some notably differences from the aforementioned. They believe that IA is common and often rational (Golman et. al. 2017, p. 96-99, 124, 128). Unlike Sweeny et. al., Golman et. al. assume that IA is also a possible behaviour of animals, even if they limit their research to that of humans (Ibid., p. 96, their assumption is based on Jenkins and Boakes 1973, who found behavioural patterns in animals, that appear similar to the later defined IA). Most notably is the fact, that Golman et. al. only focus on “active” IA. For Golman et. al. active means avoidance behaviour, in which (1) availability of the information is known and (2) the information is or would be avoided, if it had no cost, therefore ensuring that the avoidance is solely founded on the (perceived threat of the) information, rather than the obtaining process (Ibid, p. 97f.). While Sweeny et. al. define active and passive through the need for action for avoidance (Sweeny et. al. 2010, p. 341), Golman et. al. define it through awareness and attention. Consequently Golman et. al.'s “active” IA is quite similar to Sweeny et. al.'s basic definition of IA. Golman et. al. never define passive IA or information avoidance behaviour as a whole, but imply that passive IA would be avoidance due to inattention or subconscious desire, instead of active purpose (Golman et. al. 2017, p. 97, 103). Besides the different definitions of active, a notable difference to the former authors is also the inclusion of mental avoidance behaviour. Golman et. al. see intentional forgetting, misinterpreting or confirmation bias as variations of IA (Ibid, p. 100-103), while Sweeny et. al. explicitly exclude them, due to them being “reactions to information that can not be avoided”, rather than avoidance of the information itself (Sweeny et. al. 2010, p. 342).

In her 2017 article, Addison explores IA in health care and expands Sweeny et. al.'s definition to “any behaviour intended to prevent or delay the *partial or complete* acquisition of available but potentially unwanted information *for reasons including fear and disinterest*” (Addison 2017, p. 127, accentuation added). “Partial or complete” is tied to Addison's findings that information are often only partial avoided, thus leading her to interpret IA as a scale, rather than complete avoidance. This is most notably different from Mannheim's definition, in which the investigation of complete avoidance distinguishes IA research from research on the other kinds of non-seeking-behaviour (Mannheim 2014; Addison 2017, p. 143f.). “*For reasons including fear and disinterest*” is grounded in Addison's findings, that situational effect, especial fear, is in most cases the reason to

engage in IA. Disinterest is often based upon fear and might thus be in many cases the result of a subconscious IA decision according to Addison (2017, p. 126f.). A notable difference to the findings of prior research is the low influence of traits on IA (Ibid., p. 140f.), being determined mostly by situations rather than personality. This result is not replicated by Golman et. al.'s article (2017 p. 109), which is however a literature review instead of a case study, thus accordance with the results of older research is to be expected. Other newer research also focuses more on situations instead of traits to explain IA, even if the latter still remains a relevant factor (e.g. Howell et. al. 2014; Jang 2014; Carcioppolo et. al. 2016, p. 986; Freddi 2017; Vrinten et. al. 2018; Howell et. al. 2019).

In this article IA will be used as in the beginning defined, however it will incorporate other definitions as necessary, to be as inclusive as possible. While behaviour intended to avoid information includes disinterest following Addison's results, it will be mostly excluded due to the difficulties of separating between disinterest caused by fear and disinterest caused by missing relevance. Since the same reasoning was used by Sweeny et. al. to exclude mental IA and Golman et. al. to exclude any IA, which is at least partly motivated by the costs of acquisition, the understanding of disinterest might grow enough to make such an exclusion obsolete in the future.

As seen by the different definitions and frameworks of IA, as well as prior reviews that are either partly outdated or based upon a different understanding of IA, information science requires a new review, if it wants to be thorough. This is the aim of this paper: To provide an overview about the different trends of research and the current understanding of IA. Thus the research question follows: How is IA currently understood and researched?

Through this question the paper contributes directly to the information science literature. However it might also be important for economics, psychology and health related research, as it aims to connect the different research-path that these areas have taken and make it possible to view them in one document.

Theories

There are a number of different theories that were used to explain IA behaviour. Many of these focus only on aspects of IA or come from different research-areas where IA is not necessarily directly researched, but rather observed.

One of the most important theories for IA-research is selective exposure theory. It is mostly researched in psychology and developed from knowledge dissonance theory: that people are more likely to avoid knowledge, if it does not fit their world-view. Most notably, this requires that people already know the content or suspect to know the content of the information they avoid, thus excluding a large part of IA in uncertain circumstances. Thus it only focuses on one aspect of IA, despite its exhaustive exploration (Sweeny et. al. 2010, p. 341f.). In recent years, selective exposure has come under fundamental critique, as researchers, most notably Jang and Song, found out that seeking of conformist information does not always appear together with avoidance of non-conformist information (e.g. Sweeny et. al. 2010; Jang 2014; Song 2017; Zhu et. al. 2017 among others). Therefore they argue to split selective exposure into selective avoidance and selective approach, called selective seeking by Jang, as both act independently from each other. In a contrasting definition, Zhu et. al. see selective avoidance as complete avoidance of non-conforming information, similar to Manheim's basic definition of IA (Manheim 2014; Zhu et. al. 2017, p. 113). This paper will however use selective avoidance and selective approach in the sense of Jang or Song. Bode et. al. (2017) researched selective attention, another name for selective approach, by testing after how many keywords and how much time people stop reading political posts on social media (Bode et. al. 2017, p. 2f.). While they classify their research as selective approach, it is also relevant for IA, since it studies how people identify information they wish to avoid and thus bears, similarities to satisficing research. (Bode et. al. 2017, p. 1; for satisficing see Manheim 2014). However unlike satisficing research, in Bode et. al.'s research, people stop not by having a result, but rather by noticing that the political content is nothing they wish to deal with right now (Bode et. al. 2017, p. 4). Which could also be classified as coming to a result above the content, rather than about the information inside the content.

Similar research paths, which are also based upon knowledge dismissal, are confirmation bias and moral avoidance. For ease of reading, both are summarised under selective

exposure theory, even though they see themselves as independent strings of research.

According to confirmation bias, also called biased interpretation, people consider what to believe based upon their former knowledge and thus dismiss information inconsistent with their world-view. This leads to the result, that “presenting both sides with the same evidence increased, rather than decreased, belief polarization” (Golman et. al. 2017, p. 102). While new information will add to the former knowledge and shift the world-view slightly and indirectly, it does this far more slowly and unreliably than consistent information. A subcategory of confirmation bias is optimistic bias, i.e. positive bias. It is the notion of people that they or people close to them are above the norm in some way. This above the norm refers to being better than the average, being more resistant to harm or just more lucky. Optimistic bias is often justified with arguments, however these are usually based upon personal experiences and rarely robust. Prior research found optimistic bias to be a reason for less searching, especially in a health context (Addison 2017, p. 14, 140). Rather similar is optimism management, which concludes that optimism can be managed like any other resource. Therefore IA can be employed to protect such optimism or optimistic bias (Addison 2017, p. 14; Golman et. al. 2017, p. 110f.).

Moral avoidance, mostly researched in economic literature, classifies itself under strategic avoidance (Freddi 2017, p. 46; Golman et. al. 2017, p. 116). But it is also a form of selective exposure, as people avoid moral information, based on its suspected content. Moral avoidance is the avoidance of lose-lose-situations, by intentional failing to engage with information about the morally right decision (Andreoni et. al. 2017, p. 625-629; Freddi 2017, p. 3). This is also referred to as “moral wiggle room” in some research (Dana et. al. 2007, p. 69; cited by Golman et. al. 2017, p. 98f.), based upon the assumption that people act morally only due to social constraints and appearances, thus this “wiggle room” is allowing them to act naturally. However Andreoni et. al. argue that people who avoid moral information are those which are actually empathic. By avoiding the moral information, they can avoid being torn between guilt and the need to preserve their own resources (Andreoni et. al. 2017, p. 627). In another discussion paper about moral avoidance around refugees in Sweden, Freddi found out that people are more likely to avoid information about the live of refugees, as soon as these were settled in close proximity. This relation was even stronger, if the articles were empathic towards said refugees. For this study she evaluated clicks on online-newspaper articles. Since these are

not openly viewable, it is unlikely people avoided these information to keep a social appearance, but rather to prevent themselves from feeling guilty (Freddi 2017). Therefore the results of Freddi's study support Andreoni et. al.'s assumption.

Almost as influential as selective exposure is the Monitoring & Blunting theory. It assumes that some people prefer information, if they are stressed, thus possessing the monitoring trait, and some people avoid additional information under stress, therefore being blunters. This theory was often employed by older research (see for examples Sweeny et. al. 2010, p. 347 and Addison 2017, p. 9), even if blunting is a reactive behaviour and thus no IA, at least according to Howell et. al. (2014, p. 102f.). Both monitoring and blunting are determined by their respective scales, which are often used to differentiate between light and strong blunters / monitors (Case et. al. 2005, p. 355; Addison 2017, p. 9, 82). However until 2005 only the monitoring scale was ever proven to be accurate (Case et. al. 2005, p. 355). This fits with newer research, which often fails to find proof of monitoring or blunting influence in an IA context (Addison 2017, p. 131f., 141). While personality traits seem to influence the information avoidance behaviour (Golman et. al. 2017, p. 109), Addison assumes them to be more akin to health motivation and perception, instead of blunting or monitoring behaviour (Addison 2017, p. 85).

Further theories from psychology exploring trait-based avoidance of information include need for cognition and need for closure. Neither has been well-researched in IA literature, since their researchers don't count themselves as part of the IA-research body, even if they study similar topics.

Need for cognition (NFC) refers to the extend, to which people consider cognitive effort as costly or see intrinsic value in it (Sandra and Otto 2018, p. 102). As such, people low in NFC should be unwilling to engage in cognitive effort, seeing it in itself as costly, while people high in NFC should relish in it. Addison however found no correlation between NFC and IA, as people would engage in seeking or information avoidance behaviour independent from their NFC-scores (Addison 2017, p. 79f.). There is no other research on NFC in the IA literature, but as aforementioned the NFC literature itself often explores similar topics.

The need for closure (NFC) or need for cognitive closure (NFCC) theory (Brizi 2016, p. 1) was only mentioned by Sweeny et. al. as a potential explanation for IA and never

researched in an IA context (Sweeny et. al. 2010, p. 347). As need for cognition is already abbreviated with NFC, in this paper NFCC is used as abbreviation for need for closure, against research convention. According to the NFCC theory people feel increasing stress and agitation until a task is finished. This agitation can lead people to initiate the search process, but will also entice them to accept fast solutions, enabling satisficing behaviour (according to the definition by Manheim 2014). Then after a task is “closed”, the agitation entice them to “freeze” it, meaning they are unwilling to revisit and question it again. Based on this behaviour NFCC can further be divided into urgency NFCC, the need to close tasks, and permanence NFCC, the need to keep closed tasks closed (Roets et. al. 2015, p. 225f.; Brizi 2016, p. 1f.). Interestingly, while permanence NFCC measures the unwillingness to question consolidated beliefs, during the seeking process (urgency NFCC) people with high NFCC are still willing to change their assumptions, even through the input of others (Roets et. al. 2015, p. 229). Only after they have a task completed, do they avoid contradicting information (Sweeny et. al. 2010, p. 347; Roets et. al. 2015, p. 229, 232f.). How much a specific person displays NFCC is measured by the NFCC scale, whose point measurements rank the person between avoidance of closure and need for closure (Brizi 2016, p. 1f.). While NFCC is usually understood as a stable trait, it can also be influenced through situation specific stimuli, similar to other IA behaviour (Acar-Burkay et. al. 2014, p. 732; Roets et. al. 2015, p. 223f.; Brizi 2016, p. 2). Some literature assumes NFCC to be a reversion of need for cognition. However this is not the case, as high NFCC is not synonymous with avoidance of cognition. As seen with immediate NFCC, people with high need for closure are more likely to engage in information searching and cognition. Only once they have finished a task are they unwilling to revisit it (Roets et. al. 2015, p. 231-233).

Group-centrism theory is based upon high NFCC behaviour. According to group-centrism, people with high NFCC are more likely to accept a group consensus or actively work to reach one. They are more likely to defend their group's beliefs against questioners from within or outside the group and promote their beliefs (Kruglanski et. al. 2006; Roets et. al. 2015, p. 227f.; Brizi 2016, p. 2). As mentioned by immediate NFCC, to reach a consensus they are willing to be persuaded by other people (Kruglanski et. al. 2006, p. 87; Roets et. al. 2015, p. 229). To which group people with NFCC belong is obviously context-sensitive, but Kosic et. al. published an interesting study on it. They found that people high in NFCC

that came in a group were more resistant against assimilation into a new culture than their low NFCC counterparts. However people with high NFCC and without a group adopted the new culture faster (Kosic et. al. 2004, notably p. 809).

There are many theories regarding information behaviour, including IA, that are based upon the management of uncertainty. The basic Uncertainty Management Theory (UMT) defines uncertainty as a state of mind, defined by lack of confidence and knowledge about a topic (Addison 2017, p. 13). Uncertainty might be either negative, related to anxiety and fear, or positive, defined by hope (Carcioppolo et. al. 2016, p. 980). Thus information behaviour can be either directed to increase uncertainty, to reduce it or to keep it steady. Most studies assume that negative uncertainty usually leads to seeking behaviour, aimed to reduce uncertainty, while positive uncertainty would lead to avoidance behaviour, intended on preserving it (Addison 2017, p. 13). However this is not always the case (Case et. al. 2005, p. 355f.; Carcioppolo et. al. 2016, p. 980f.). Carcioppolo et. al. have defined four reasons for information behaviour based in uncertainty. These are (1) seeking to reduce uncertainty, (2) seeking to increase uncertainty, (3) avoiding to maintain (positive) uncertainty and (4) avoidance of information perceived as insufficient (Carcioppolo et. al. 2016, p. 979). In accordance with their assumptions, Carcioppolo et. al. did find not only a relation between the two seeking behaviours and the two avoidance behaviours, but also a positive correlation between avoidance to maintain (positive) uncertainty and seeking aimed to increase it (Ibid., p. 985f.). One situation not specifically mentioned by Carcioppolo et. al. is avoidance behaviour to maintain (un-) certainty, by avoiding further conflicting information. (3) is assumed to preserve positive uncertainty (Ibid., p. 980), but it might just as well be used to prevent negative uncertainty from increasing. Inhibitory Intolerance of Uncertainty, a trait from clinical psychology which is explained in detail later, manifests as avoidance of actions in uncertain situations. This specific form of IA is used to manage uncertainty, by preventing current negative uncertainty from increasing (Talkovsky and Norton 2016, p. 108). Additionally, “insufficient” in (4) refers to rejection of information perceived as irrelevant or misleading (Carcioppolo et. al. 2016, p. 981). Considering that information might also be rejected based on confirmation bias and selective exposure theory, “insufficient” implies an impartiality that is not always the case. Lastly, while not bound to positive or negative uncertainty, Carcioppolo et. al.'s model ties changes of uncertainty to seeking behaviour, while preservation is always achieved by

avoidance (Ibid, p. 979). This implies that a change in certainty can only come by receiving new information and not by reconsidering already acquired knowledge. Considering the human ability to worry and to come to conclusions on their own, this appears to be a dangerous baseline assumption.

In 2004, Afifi and Weiner developed the Theory of Motivated Information Management (TMIM) based on UMT and in 2009 Afifi and Afifi revisited it. The theory was developed for topic avoidance (Afifi and Afifi 2009, p. 489), thus being focused solely upon direct communication. However, its conception is broad enough to merit its consideration also in other instances of information behaviour. In TMIM the information behaviour process is initiated by a discrepancy between actual uncertainty and intended uncertainty. The intended uncertainty can be either more or less uncertainty. This discrepancy leads to anxiety, which in turn initiates the information management process. Since anxiety starts the management process, the process will end if the anxiety is resolved, even if the discrepancy between actual uncertainty and intended uncertainty is not. The evaluation phase follows after this initiation phase, in which the possible gains are weighted against the risks. Lastly follows the decision phase, in which the person decides to engage in communication or to avoid the topic. Main problem of the TMIM according to its creator are their evaluation factors, of which only communication self-efficacy is reliable (Ibid., p. 491-493). Especially the unreliable results of coping efficacy are for Afifi and Afifi surprising, considering how important it should be to be able to deal with the new information. They assume that the problem could be the measurement, which might only measure personal coping ability instead of relational coping ability, meaning the ability of the relation between the subjects to withstand the information (Ibid., p. 505f.). Unlike UMT, TMIM does not differentiate between positive and negative uncertainty. However, it does include the wish to increase uncertainty, which usually would mean desired positive uncertainty, being in most cases hope. Interestingly, this intend to increase hope is still tied to the anxiety of having too little hope, instead of it being pursued as self-gain. Unlike basic UMT, TMIM predicts the preservation of negative uncertainty as well (e.g. every time someone engages in IA, despite anxiety to do otherwise). Lastly it does not include IA to retain actual positive uncertainty. After all, the model is initiated by desired change in uncertainty, thus excluding any behaviour intended to preserve uncertainty as self-gain, instead of preservation of uncertainty for fear of the suspected consequences. This shows

the main limitation of the TMIM: That it only predicts active and not reactive information behaviour. Reactive information behaviour would have to be measured by a difference between current and expected uncertainty instead (Sweeny et. al. 2010, p. 342 criticised UMT in general in a similar way. However Carcioppolo et. al. included reactive behaviour in UMT by protection of uncertainty through avoidance, while TMIM did not).

Uncertainty Orientation is a trait that is measured by a scale of point values, ranging from certainty-orientated to uncertainty-orientated. Uncertainty-oriented people prefer new information and thus more uncertainty, while certainty-oriented people prefer to avoid new information, thereby reducing the amount of uncertainty they have to face. Uncertainty Orientation was solely mentioned by Sweeny et. al. as a likely reason for IA (Sweeny et. al. 2010, p. 347). It is also the foundation of the NFCC theory (Acar-Burkay et. al. 2014, p. 720). While not rebuked, Uncertainty Orientation has simply not seen use in the IA literature since Sweeny et. al.

Intolerance of Uncertainty (IU) is a clinical classification applied in psychology. People with IU have a negative view of uncertainty and react with a great deal of negative anxiety in uncertain situations, often expressed in excessive worry. IU was firstly linked to generalised anxiety disorder, however newer research argues that IU is common in many different emotional disorders, but may manifest in different behavioural patterns (Boswell et. al. 2013, notably p. 1f.). It can be separated into the trait IU, as well as disorder- or situation-specific IU, which could be an intermediary between trait IU and the symptoms it causes (Shihata et. al. 2016, p. 116). “Worry [and so IU] can serve an experiential avoidance function”, as non-arrival of dreaded events is attributed to worry instead of their low probability, thus leading to negative reinforcement (Boswell et. al. 2013, p. 1f.). There are two kinds of IU, namely prospective IU and inhibitory IU (Shihata et. al. 2016, p. 116; Talkovsky and Norton 2016, p. 108). While prospective IU is classified by “active[ly] [...] seeking certainty” and a general “desire for predictability”, inhibitory IU leads to avoidance of actions or paralysis until either higher certainty is reached or the uncertain situation has passed (Talkovsky and Norton 2016, p. 108). Thus prospective IU is a response based on future uncertainty, while inhibitory IU reacts on present uncertainty (Shihata et. al. 2016, p. 116). Sweeny et. al. assume that people high in IU would be more likely to search for information to reduce their uncertainty (an assumption that was confirmed by one study referenced by Sweeny et. al. 2010, p. 347). However, this

assumption seems only to hold true for prospective IU. Inhibitory IU should be more likely to engage in IA, until the uncertain situation has become more manageable (Shihata et. al. 2016, p. 116), similar to certainty-orientated people in Uncertainty Orientation Theory (Sweeny et. al. 2010, p. 347). This would also fit with Carcioppolo et. al.'s results, that seeking can either increase or decrease uncertainty (Carcioppolo et. al. 2016, p. 985. For additional examples see Case et. al. 2005, p. 355f.).

Utility theory is one of the most important explanations for IA in economics. Most other theories employed there, for example moral or strategic IA, can be traced back to utility theory. According to utility theory people consider different objects to have different utility and choose between them based upon their utility in conjugation with the cost of acquisition. While the basal utility theory was based upon material gains, more modern forms of the theory also include strategical utility, which only “promote[s] material outcomes” (Golman et. al. 2017, p. 129). Thus IA can also be classified by utility theory, as the avoidance of information can be used to manipulate the behaviour of others and oneself. Golman et. al. wish to extend this definition of utility further. Following their argumentation, pleasure and well-being are also forms of immaterial utility, which carry no direct benefits and are thus not strategical. Golman et. al. refer to this second form of utility as hedonic and the verification of its influence on IA is one of the aims of their article (Ibid., p. 19, 128f.).

IA to gain strategical utility is fittingly dubbed strategical IA and is an important part of game theory, but also found in other research areas. In its simplest form strategic IA refers to the old saying: „Ignorance is Innocence“, meaning that missing knowledge, even if self-inflicted, protects from conviction. Golman et. al. encompass under strategic IA any behaviour, which intends to manipulate the behaviour of oneself, named intrapersonal strategic IA, or others, interpersonal strategic IA, through the avoidance of information. There are many experimental studies on strategic IA. Notably, Huck et. al. discovered that the knowledge of a high wage for a task leads to less (work) motivation and efficacy, than being uncertain about ones wage (Huck et. al. 2015. Golman et. al. 2017, p. 115 wrongly cite that being uncertain was merely as efficient as being promised the high wages). Additionally while much research assumes that IA would be stronger after a decision (see Golman et. al. 2017, p. 110-113), there is also some research that suggests that IA is in certain cases stronger before a decision, to avoid temptation or doubt. After the decision

has passed, these people displayed less IA (Woolley and Risen 2018, p. 241f. While this correlation was found also elsewhere [Golman et. al. 2017, p. 114; Woolley and Risen 2018, p. 230f.], Woolley and Risen 2018, p. 239, 241 give their control-group for after decision-IA no decision, assuming that those results would be identical. Thus their findings are less dependable, than they assume). Moral avoidance, in this paper classified under selective exposure, is a form of strategic IA as well, since people choose to not obtain information, that would otherwise lead either to undesired feelings or behaviour (Golman et. al. 2017, p. 117f.).

Hedonic IA refers to IA, that is utilised to increase, gain or avoid decrease of pleasure (Golman et. al. 2017, p. 105). There is less research based upon it, as Golman et. al. still attempt to establish it (Ibid., p. 128f.). Noteworthy are Ganguly and Tasoff who found that some people would forgo payment to avoid getting tested for a disease, even if it would require no additional effort (Ganguly and Tasoff 2017, p. 4037f.). However moral avoidance could also be classified under hedonic IA, as ultimately the avoidance of guilt, a form of negative affect that would decrease pleasure, is the intention of the behaviour. Similar cases can be made for many forms of IA, most notably positive bias.

Possibly a manifestation of positive bias (Golman et. al. 2017, p. 111), groupthink is a behavioural model researched in psychology and economics (Bénabou 2013, p. 2; e.g. Golman et. al. 2017), in which the belief of a group is supported and advocated, despite overwhelming counter arguments. Groupthink describes a situation, in which people support “the” belief of their group and act according to it. They defend this belief against opposing information and other threats from within and outside, even despite towering evidence (Kruglanski et. al. 2006, p. 88, 95; Bénabou 2013; Golman et. al. 2017, p. 111). It is thus quite similar to the younger group-centrism theory of NFCC. But while groupthink believes that the need of the group is ranked falsely above the social reality, group-centrism defines the group itself as the social reality of its members (Kruglanski et. al. 2006, p. 88). Thus leading to the main difference of the theories, that according to group-centrism the social reality creates the group-belief, while in groupthink this belief is defended against the social reality. If the definition of social reality would be unified, these theories could be possible combined.

Similar to optimistic bias is also competency theory. Known as well as Dunning-Kruger

effect and fittingly dubbed as meta-ignorance by Dunning (2011), competency theory states that people who have no or low-knowledge in an area, often also fail to realise that they need information about it. Thus they have a false sense of competence, leading to bad decisions and the avoidance of needed information (Dunning 2011, p. 260; Addison 2017, p. 139f.). Interestingly, Dunning found that actual knowledgeable people project their competence on others, thus assuming that those others are more competent, than they are (Dunning 2011, p. 271f.). Competency theory is a difficult topic for IA, as the subjects are not aware that they are missing information and thus do not want them. While relevant information is avoided, the subjects do not recognise it as relevant, which makes it not IA from their perspective. Even more interesting is the theory in consideration of confirmation bias. Since the information is only non-relevant in the subjects world-view, it could be classified as confirmation bias. Finally, the distinction between avoiding information due to believing them to be unnecessary (or wrong) and avoiding them due to the fear of being wrong, is very important. Based upon this distinction, which isn't made in competency theory itself, it is either simple ignorance or IA, with the subject trying to protect their own ignorance. Competency theory was often criticised for being based on over reported results due to reliance on redundant measurements (Feld et. al. 2017, p. 19f.). Modern research found the effect to be existent, but being less influential than Dunning and Kruger originally imagined (Ibid., p. 23). While not researching competency theory directly in an IA context, Addison mentioned the theory as a possible explanation for peoples' wrong assumptions about their seeking behaviour. She concluded, that competency theory extends into information literacy, thus leading people to assume that they would search longer and more efficient, than they do in reality (Addison 2017, p. 141f.).

Lastly, Witte's extended parallel process model (EPPM) and crisis decision theory are two different theories in psychology with the same conceptualisation of resource allocation (Vrinten et. al. 2018, p. 118). Because of these similarities they are not differentiated here. If people are faced with a threat after EPPM, they consider their resources and possible strategies for dealing with it. However, if no sufficient strategy is available the effort is instead allocated to avoiding the cognitive consideration of the threat. According to EPPM, this allocation is based upon fear motivation, while in crisis decision theory, IA is not considered an avoidance of the coping process, but rather a viable strategy of it (Howell et. al. 2014, p. 102; Vrinten et. al. 2018, p. 118). EPPM possesses many similarities with

TMIM, as both are based upon emotional motivators, fear or anxiety, which determine resource allocation. However TMIM is based upon in itself neutral uncertainty instead of negative threat and resources are allocated to resolve the anxiety, instead of the uncertainty. Thus it gives an explanation why sometimes the uncertainty management process is finished, without having reached a level of desired uncertainty (Afifi and Afifi 2009, p. 491). Both EPPM and crisis decision theory were rarely used in IA or IA-related research, even if they did predict IA behaviour in those rare instances adequately (e.g. Howell et. al. 2014; Vrinten et. al. 2018).

All these theories predict in some way IA. However some, notably IU and NFCC, were never explored in IA research itself, while others, Monitoring & Blunting and Uncertainty Orientation, were used less with time. In recent years theories based upon behaviour or knowledge have been found to be more reliable, while theories based upon traits are seeing more and more criticism. The explored theories are not exhaustive however. For example Avoidance Motivation could provide a framework to explore IA, even if researchers would have to rework it to include modern results.

Research-methods

IA has been researched using many different methods, due to the difficulties of measuring IA. Most commonly employed were surveys, in physical form or online. The latter were mostly conducted using Amazon's Mechanical Turk (MTurk). MTurk is an online labour market, in which people complete studies for a small amount of monetary compensation. Surprisingly fewer workers on MTurk were interested in their payment (45%), than students paid with college credits (78%) in a study conducted 2011. Other, but less relevant reasons for participation were the entertainment factor or the acquiring of new skills (Chandler and Shapiro 2016, p. 59f.).

While listed here among surveys, online experiments can also be conducted on MTurk. Most notably, in one study the participants webcams were used for an eye-tracking experiment (Ibid., p. 63). Tasks on MTurk are often completed under distracting circumstances, but no relevant negative influence on data quality has been found (Ibid., p. 60). To prevent hasty or wrong answers most researchers employ at least some trick questions, which have a specific answer demanded in their question-text or are intentionally complex (e.g. Addison 2017, p. 40f., 146; Howell et. al. 2016, p. 818f.). Though Chandler and Shapiro discourage from employing such tricks, as they might influence answers on following questions and MTurk-workers have become increasingly adapt at spotting them. Instead data quality should be ensured through “less obtrusive approaches”, like selecting participants by approval rating (Chandler and Shapiro 2016, p. 70).

Overall Chandler and Shapiro recommend keeping as much information as possible hidden about the purpose of a study, to prevent selection bias, i.e. study-selection based on the content of the study, as well as wrong reporting, due to misunderstandings or intent. The later is incentivised by the monetary nature of the platform, as misleading self-reports open access to studies and therefore payment. Thus research should not be limited to specific populations, but rather measure their presence within the participants. If exclusion is necessary based on the rarity of a group, questionnaires or tasks inside the study should be employed to identify pretenders. For example one study let military veterans sort insignia by rank. Another problem of MTurk are practice effects, i.e. the familiarity that workers gain with common research measurements. Most notably they do improve their

performance on measurable ability checks, like IQ-Tests. Chandler and Shapiro advice communication between related research to exclude workers from participating in too similar studies, potentially by using external software or linking data to worker-identifiers (Ibid., p. 67-70).

Nevertheless most research on MTurk came to positive results considering its reliability (Howell et. al. 2016, p. 818; e.g. Chandler and Shapiro 2016, notably p. 72f.), even though its workforce has some notable differences to the population as a whole. So are MTurk-workers mostly younger, more liberal and less religious. They are also usually less capable in dealing with stressful or social situations, including having a higher proportion of related mental conditions. Chandler and Shapiro therefore conclude, that MTurk might be useful to reach populations, which are usual under-represented in conventional studies (Chandler and Shapiro 2016, p. 57-59, 73).

However MTurk is not the only labour market in existence (Ibid., p. 72f.), despite being the only one used in the reviewed studies. Furthermore Addison utilized MTurk merely to recruit participants and conducted her actual study on LimeSurvey, a Canadian survey-platform (Addison 2017, p. 33). Besides that, Vrinten et. al. employed survey data from the Attitudes, Behaviour, and Cancer-UK Survey (ABACUS) 2014 and Song reused interview-data from the American National Election Studies (ANES) 2012 (Song 2017, p. 52; Vrinten et. al. 2018, p. 119).

Hypothetical scenarios were used in many surveys, most often in the health domain. They refer to scenarios in which people are supposed to imagine being in a certain situation, in most cases having contracted a threatening disease (Dawson et. al. 2006; Howell et. al. 2016; Addison 2017; Ganguly and Tasoff 2017, p. 4052-4057). While hypothetical scenarios are not necessarily reflective of peoples real behaviour and often biased, the advantages are the easy modifiability and that they allow ethical observation of people in problematic situation. Additionally the created psychological distance prevents observer effects. However Addison forgoes the use of words like 'imagine', so that participants do not feel too removed from the study (Addison 2017, p. 36; Ganguly and Tasoff 2017, p. 4052). Such online surveys were sometimes employed as pretest to prepare interviews, user studies or experiments (Addison 2017, p. 32; Woolley and Risen 2018, p. 233f.).

Experiments were conducted nearly as often, with a wide range of different tasks, probably

because of the many different research areas. Notable is Jang, who used cognitive load, to simulate multi-tasking and thus proved that selective exposure requires cognitive effort (Jang 2014, p. 679-681). He also employed tracking software, to study which links people followed, in separating selective approach and selective exposure. For each of his three topics he provided a pro, contra and neutral link and studied which of these links people followed (Ibid., p. 673). Similar tracking was employed by Gaspar et. al. to measure if a glossary, reachable by clicking highlighted terms in their study text, saw use. For this they used the online deliberation tool VIZZATA, which comes with these possibilities included (Gaspar et. al. 2016, p. 539).

There were also different tasks to capture implicit IA, i.e. avoidance that is not controlled by cognition. Howell et. al. used speed, forcing people to select an answer for a scale under time pressure, while Woolley and Risen designed decisions, where people had to decide if they would accept an emotional unappealing offer (Howell et. al. 2016, p. 817f.; Woolley and Risen 2018, p. 232f.). Lastly there was an Approach-Avoidance Task, employed by Fleurkens et. al., in which people had to either push away or drag to them different pictures. If these pictures were to be pushed or dragged was determined by their frame, so that Fleurkens et. al. could measure by the differences in speed and distance the implicit IA tendency toward the pictures themselves (Fleurkens et. al. 2014, p. 2f.).

Nash-Games and other bargaining games were used by economic research to prove strategic IA. In these games IA provided a significant, even if not obvious, advantage. By learning to utilize this advantage, people demonstrated the existence of strategic IA (Golman et. al. 2017, p. 120). Similar experiments were employed to measure moral avoidance. In an experiment 'dictators' could choose one of two outcomes, while their partners just had to accept it. Both partner and 'dictator' would always prefer one outcome, however which one the partner preferred was hidden. If it was possible for the 'dictator' to learn which outcome their partner would prefer, they would still more often avoid that information. This was however only true in those cases, where their partner would be informed about the decision to learn the information. Since the 'dictator' could choose the outcome of the game and the game partner just needed to accept it, by openly avoiding the information, the game partner would be more likely to accept the deal (Ibid., p. 116f.). Other variations of moral avoidance experiments include Andreoni et. al. They instructed Salvation Army members to either ask or silently implore for donations in front of one or

two supermarket entrances. By comparing the amount of donations and the number of contributors between the different settings, they found that some people would avoid by using another exit, while others would try to ignore the Salvation Army members (Andreoni et. al. 2017). Finally Freddi researched moral avoidance by identifying through a text-analysis topics people would be likely to avoid and then measured the number of page-views (clicks) to study the avoidance of these topics (Freddi 2017, p. 12-14). Even if not directly IA, Bode et. al. used eye trackers to measure selective attention, by counting after how many words people would stop to read an article (Bode et. al. 2017, p. 2f.). For topic avoidance Afifi and Afifi invited pairs of parents and their children to their study. These pairs got, after filling out a short survey, to sit together and choose three of four topics, which they could discuss as long as they would like. By measuring how long each pair discussed a topic and which topic was eliminated, both in combination with the results from the survey, Afifi and Afifi tried to deduce which traits would be related to the avoidance of which topics. They however note, that their study promotion might have lead to selection bias, i.e. preselection, among their participants. So did they promote their study as one about parent-child relationships. This might have primarily attracted pairs to the study, which already had or believed to have a good relationship to begin with (Afifi and Afifi 2009). Finally Howell et. al. (2019) measured threat by taking pictures of their participants and pretending that these would be rated by different groups. They found that participants were most likely to avoid their ratings, if they were to be rated by fellow students from their own university. If they were to be rated by students at others universities, especially on other continents, or by children or retirees, were they far less likely to avoid their feedback.

Interviews were also sometimes used. Most notably by Addison, who used MTurk as pretest and quantitative survey, as a contrast to the qualitative interviews, which were combined with a user study (Addison 2017, p. 31-33). Interviews have the advantage that they can be exhaustive and that behaviour the researcher was previously not aware of can also be identified. Chatman found prove of IA by elderly women in a retirement community. This is notably since in Chatman's time IA was neither known nor defined. Thus she described the behaviour of IA and highlighted the need for further research on the topic, without employing the term IA itself. Chatman conducted her interviews over a longer time frame, to gain the trust of the elderly and to be exhaustive (Chatman 1992).

However time can also be employed to measure changes. This was done by Gaspar et. al. with three surveys, to test how much a IA desire would affect the (perceived) knowledge about and attitude towards red meat over time (Gaspar et. al. 2016, p. 539). Likewise did Geiß, who spread three telephone-surveys over as many weeks to measure differences in mass media reception. However due to practical limitations these telephone surveys were restricted to the city of Mainz, an urban area with an above average education level. Thus they were on their own not representative of whole Germany, as Geiß mentions in his section on limitations (Geiß 2015, p. 18, 313f.). Gaspar et. al. surveyed the same participants in their studies, with few people leaving before the third survey. In contrast Geiß added people for the second and third wave, to control for panel-effects, meaning influences through the telephone survey itself (Geiß 2015, p. 313f.; Gaspar et. al. 2016, p. 538f.).

Lastly there were in some rare cases statistics employed to determine likely IA behaviour, e.g. in research on groupthink (Bénabou et. al. 2013).

There are many different measurements to gauge IA and factors that might be related to it. Most commonly employed were scales, intended to either gain knowledge about a participants personality or to measure IA (e.g. in Afifi and Afifi 2009, p. 495-498; Acar-Burkay et. al. 2014; Gaspar et. al. 2016, p. 539-541; Addison 2017, p. 61-63; Vrinten et. al. 2018, p. 119f.). However if combined with experiments, the avoidance in the experiment itself was often measured (e.g. in Jang 2014; Bode et. al. 2017; Freddi 2017; Ganguly and Tasoff 2017; Howell et. al. 2019). Therefore, different researchers made use of illnesses and risk-calculators to measure health IA. The use of fake illnesses had the advantage, that they were easier to manipulate than real diseases to measure the influence of different factors on IA. These factors were mainly relevance and controllability, measured in how serious an illness was and if it could be treated (Dawson et. al. 2006, p. 752f.). However real diseases could be manipulated by choosing different phrasings (Dawson et. al. 2006, p. 752; Addison 2017, p. 37f.) or strains of the same disease (Ganguly and Tasoff 2017, p. 4043f.).

To avoid confusing IA with disinterest, Howell et. al. employed button prompts, in which the information gain was preselected. Thus people had to actively choose avoidance (Howell et. al. 2016, p. 817). Similar did Ganguly and Tasoff take a blood probe

irrespective if their participants had chosen to undergo testing. The blood samples of those which avoided the confidential test were discarded afterwards. By this it should be insured that the test was avoided for fear of the information, instead of the testing procedure or social stigma (Ganguly and Tasoff 2017, p. 4043f.).

In conclusion was IA researched with many different methods. Most commonly employed were surveys, in physical form or online, followed by experiments in many different forms ranging from approach-avoidance-tasks to Nash Bargaining games. Additionally the completion of tasks under distractions or time pressure was employed to measure situational or implicit avoidance. Interviews were also sometimes used, in one case in combination with a quantitative study on MTurk. While interviews and surveys are simple to conduct, they are also the most vulnerable to wrong reporting, either through wrong memories or because IA is seen as inferior and less desirable to be reported (Addison 2017, p. 139; Moodley et. al. 2018, p. 10). While experiments require more effort to prepare and are often more limited in their application, they give concrete proof of certain behaviour, especially if people are not aware of what is tested (e.g. Ganguly and Tasoff 2017, p. 4048). Additional have distractions, time pressure and other influencers shown themselves promising in researching certain aspects of IA, even though they have been only rarely employed (e.g. Jang 2014; Howell et. al. 2016; Woolley and Risen 2018). All in all each of these methods posses their own advantages, which should be considered for future research.

Reasons for Information Avoidance

As different researchers have used different frameworks, theories and methods to understand and explain IA, so they also came to different conclusions which reasons lead someone to engage in it. These reasons partially overlap, making it impossible to create a single list about the triggers which might lead to IA.

Sweeny et. al. separated the reasons of IA into three categories, namely IA to protect cherished beliefs, avoid actions or change, and to preserve emotions. Based on selective exposure Sweeny et. al. state that people are unwilling to change their beliefs, making consistency with prior assumptions an important predictor of IA. Their second assumption is, that such beliefs are usually self-enhancing and thus cherished (Sweeny et. al. 2010, p. 342f.). Hence people would engage in IA, “to the extend [that they] [...] anticipate that information might challenge either the positivity or consistency” (Ibid., p. 343) of their beliefs. Self-enhancing refers not to necessarily positive beliefs, as negative stereotypes about others might also be viewed as self-enhancing or be cherished. Similarly, stereotypes can be questioned by default, if someone holds a stereotype questioning belief. However self-enhancing is not always influential, as Sweeny et. al. note in regard to world-view. Here they find only consistency as a relevant factor. IA might also be employed, to avoid the need for action or change. By avoiding the information that might demand action, people avoid also the need to make the possible difficult decision if they would act upon this information. Lastly IA can be employed to preserve emotions, either by prolonging pleasant ones or by avoiding negative ones. For example anticipation or happiness could be prolonged, while fear or regret would be avoided. Especially with regards to regret do Sweeny et. al. distinguish between negative emotions based directly upon an information or negative emotion based upon a decision. Only the former would fall under IA to preserve emotions. While not all three reasons have to appear in any situation in which people engage in IA, Sweeny et. al. believe that emotions always are involved. Finally, these reasons are not the sole factor in determining IA behaviour, as personality, coping resources and situational affect decide if someone engages in IA, if he has reason to do so. (Ibid., p. 342-344).

Golman et. al. instead see IA as the reaction to either hedonic, value measured in well-being, or strategical considerations. Hedonic reasons are for Golman et. al. all reasons, in

which the use of the avoidance lies in its emotional satisfaction or protection, instead of measurable values (Golman et. al. 2017, p. 105, 128f.). Strategic considerations overlap with strategic avoidance theory and can be classified into intrapersonal reasons, i.e. avoidance to manipulate ones own behaviour, and interpersonal reasons, i.e. avoidance to influence the behaviour of others (Ibid., p. 113, 119). Neither of these reasons for avoidance is superior to the other or flat out negative. Golman et. al. conclude that hedonic values are just as important as strategic ones and far too rarely considered in economic literature (Ibid., p. 100, 128f.). In contrast they also give many morally faultless examples for both kinds of strategic avoidance (so intrapersonal strategic IA includes the avoidance of temptation and interpersonal strategic IA the open avoidance of knowledge to weaken ones own bargaining position in order to promote a deal.) (Ibid., p. 114, 120f.). While Golman et. al. affirm that people also avoid knowledge despite its greater benefits, their assumptions are mostly based upon clear, intentional avoidance. This is partly due to their definition of active IA, to which they limit their research (Ibid., p. 97), but it is an important difference to other research. Coping resources and situational affect, as explored in the next chapter, are seen as main predictors if a possible occasion for IA actually leads to IA. Since Golman et. al.'s research is founded in utility theory, they consider IA as allocation, or non-allocation, of available resources including coping resources (Ibid., p. 100). While this also leads to less pronouncement of situational affect than in other literature, this excludes the difference between IA based upon direct decision or missing coping resources. This difference is especially important in health care research, since people often avoid information that should be beneficial to them due to low coping abilities (e.g. in Howell et. al. 2014, p. 108; Savolainen 2014, p. 64; Vrinten et. al. 2018, p. 118f.). Following Golman et. al. such behaviour would be a neutral, or even useful allocation of resources, while in health care this is seen as behaviour in need of treatment (Howell et. al. 2014, p. 108; Vrinten et. al. 2018, p. 118f.). While this might be a monument from times where IA was seen as inferior to information seeking (Manheim 2014), the large body of research based upon this distinction should not be excluded.

Combining Sweeny et. al. and Golman et. al. is difficult, as protection of beliefs can be either hedonic or strategic forms of IA, based upon the circumstances. So a belief might be protected under the conception of ignorance is innocence, a strategic consideration, but also because reconsidering it is emotionally taxing, a hedonic consideration. The other two

reasons of Sweeny et. al. are simpler, as avoidance of action or change falls under strategic IA and preservation of emotions is hedonic, since it has no direct measurable benefits. Unlike Golman et. al., Sweeny et. al. study coping behaviour and personality as important measurements of IA (Sweeny et. al. 2010, p. 347).

Most other research focuses solely on emotions and negative affect as triggers of IA-behaviour (e.g. Afifi and Afifi 2009; Fleurkens et. al. 2014; Carcioppolo et. al. 2016; Vrinten et. al. 2018). In those cases in which specific emotions are researched, these are usually fear, anxiety and very rarely disgust (Savolainen 2014, p. 64; Addison 2017, p. 125). Addison identified disinterest as reason for IA as well, believing that it might be the expression of a subconscious IA desire (Addison 2017, p. 71f.; 127). Of these emotions, fear and anxiety are the most stable and common predictors of IA (Savolainen 2014, p. 64). Despite being rarely researched in IA literature, Addison found that disgust, as emotion centred upon the avoidance of undesirable situations, leads also to the avoidance of information about these situations (Addison 2017, p. 90). This result is mirrored by Savolainen, as he includes examples of emotional based IA that have been identified later as disgust by Addison (Savolainen 2014, p. 64; Addison 2017, p. 90). However negative affect can also lead to seeking behaviour (Savolainen 2014, p. 64), sometimes even in correlation with IA (e.g. McCloud et. al. 2017, p. 357f. Another example where affect leads to avoidance of some information and seeking of others is selective exposure). In his literature review Savolainen found only negative emotions as reasons for IA, even though positive emotions still might lead to filtering or satisficing behaviour (besides seeking behaviour. Savolainen 2014, p. 64). This result is not replicated by Sweeny et. al., Golman et. al., literature on UMT and literature on optimism maintenance, which all include the preservation of positive emotions as a reason for IA (Sweeny et. al. 2010, p. 344; Carcioppolo et. al. 2016, p. 980; Addison 2017, p. 14; Golman et. al. 2017, p. 110f., 119). Addison found additionally, that trust in doctors would reduce information seeking behaviour (Addison 2017, p. 71f.). The difference might however be based in different viewpoints. So could be preservation of positive emotions also be interpreted as avoidance or fear of negative ones, like doubt, regret and irritation (e.g. Golman et. al. 2017, p. 105-107, 110. Note that Golman et. al. on p. 119 also include IA unrelated to such negative feelings). Considering the sometimes negative interpretation of IA (Fleurkens et. al. 2014, p. 2; Manheim 2014; Addison 2017, p. 144; Vrinten et. al. 2018, p. 118) a focus on

negative reasons in the literature Savolainen reviewed might also be possible.

All these reasons for IA have in common, that they are implied to be engaged by conscious thought and decision (Howell et. al. 2016, p. 816 found similar limitations in their previous research). While most of these reasons could also influence non-intentional IA, it is worth exploring this topic on its own. Implicit or automatic IA refers to IA behaviour, that is not engaged by more or less intentional thought, but rather by instant decisions based on instinct (Ibid., p. 816f.). It is considered to be emotion-based, instead of the cognition-based explicit avoidance (Woolley and Risen 2018, p. 233) and is believed to employ IA as instinctual defensive reaction (Howell and Shepperd 2013, p. 1697). Since it is an instinctual reaction, people are not necessarily aware of their behaviour (Fleurkens et. al. 2014, p. 2; Howell et. al. 2016, p. 816f.). Importantly these implicit tendencies predict IA behaviour unrelated to explicit tendencies (Fleurkens et. al. 2014, p. 6; Gaspar et. al. 2016, p. 544; Howell et. al. 2016, p. 820f.). Probably defined as passive IA by Golman et. al. (Golman et. al. 2017, p. 97, 103), there were some interesting results in the last years. So found Howell et. al., that contemplation would lead people to rely more, instead of less on their implicit preferences (Howell et. al. 2016, p. 820). They also found out, in accordance with their prior research, that contemplation reduces IA, there still believing that it does so by increasing dependency upon cognition instead of emotion (Howell and Shepperd 2013, p. 1701; Howell et. al. 2016, p. 820). Additionally, Woolley and Risen believe that in some cases IA is greater before a decision, instead of after. By this they protect themselves against temptation to do otherwise (Woolley and Risen 2018, p. 242). While strategical avoidance to influence decisions was already proven before (Golman et. al. 2017, p. 114; Woolley and Risen 2018, p. 230f.), Woolley and Risen conclude that people might also avoid information to rely upon their instinctive preferences (Woolley and Risen 2018, p. 242). However their experiment can be criticised for substituting their control-group on after-decision behaviour, with a control-group which had the unpleasant decision made for them (Ibid., p. 10-13).

Coping Resources and Situational Affect

The former chapter begs the question: Why do these aforementioned reasons sometimes lead to IA and sometimes to information seeking? While IA was previously often thought to be based upon personal inclinations, and still often is in psychological research with the exception of IA research, newer research found coping resources, which are changeable and are based upon live situations, and situational affect far stronger and coherent predictors (Addison 2017, p. 140f.).

So the short answer is that people with high coping resources, a measurement of their ability to deal with adverse situations, are more likely to engage in seeking behaviour, while those short on coping resources are more likely to avoid information (Sweeny et. al. 2010, p. 345f.; Howell et. al. 2014, p. 103; Savolainen 2014, p. 64; Vrinten et. al. 2018, p. 119). Coping resources can be classified into personal coping resources, encompassing someone's belief to be able to deal with their problems, and interpersonal coping resources, which are resources gained by possessing a network of people (Howell et. al. 2014, p. 103). In contrast to this paper Howell et. al. refer to interpersonal coping resources as social support and to coping resources overall as threat-management resources (Ibid., p. 103). But since the term threat-management resources is not widespread and both kinds of resources act in similar ways, coping resources is used in this article as a name for either. Interestingly, they found that interpersonal and personal coping resources separately reduce IA and are thus non-additive – having one kind of coping resources was enough to reduce IA and would not be further modified by reports of the second. In the same article Howell et. al. showed that both coping resources act in the same way (Ibid., p. 107). While coping resources are limited, counter-intuitive people with high self-complexity, having many different aspects of life they are engaged in, actually possess more coping resources and are less likely to engage in IA. This might be due because coping-resources are at least partly based upon self-esteem and people can gain energy from aspects of their live which go well (Sweeny et. al. 2010; p. 345f.), or because certain kinds of IA, selective avoidance or thought suppression for example, require themselves cognitive effort (Jang 2014, p. 684; Gaspar et. al. 2016, p. 545). Possibly supporting the observation that coping resources are based on self-esteem, in a study done by Howell and Shepperd self-affirmation reduced following IA behaviour. This can either be because self-affirmation increases self-esteem or because it reduces the perceived threat of the information. This effect could even be

observed, when the self-affirmation was used in a completely different area (Howell and Shepperd 2012, p. 141, 144). However it is only effective, as long as people are unaware that they are manipulated (Howell and Shepperd 2013, p. 1967). Coping resources might also affect IA indirectly, by influencing tendencies. For example, in one study, people with low social support preferred online sources with social narratives (Addison 2017, p. 20).

Situational affect both influences IA directly, in addition to influencing coping resources. Therefore it has as much impact upon the decision to engage in IA as direct coping resources. IA can be increased by tiredness, distractions, stress and other kinds of pressure (most aware is the NFCC-research of this correlation: Acar-Burkay 2014, p. 732; Roets et. al. 2015, p. 223; Brizi 2018, p. 2). Vrinten et. al. showed that fear mostly leads in combination with high stress to IA. If either one of was low, significantly less IA behaviour was found (Vrinten et. al. 2018, p. 124f.). Interestingly, both these factors can lead to increased as well as decreased IA (Jang 2014, p. 684). This is probably based upon whether IA or information seeking requires more cognitive effort. Another important situational factor is (perceived) threat and control, leading to the avoidance of more threatening or unchangeable / untreatable information. This behaviour lead Dawson et. al. 2006 to the theory, that IA is based upon the (perceived) relevance and (perceived) changeability of an information (Dawson et. al. 2006, p. 751-753; Sweeny et. al. 2010, p. 345 saw control as reason for IA as well). However they also note that people would often not be able to determine the changeability of information and thus come to incorrect conclusions, based upon their flawed knowledge. Prime example would be a missing understanding of the difference between untreatable and incurable (Dawson et. al. 2006, p. 764f.). Similarly, Golman et. al. state that people, despite common beliefs, often deal better with knowing the worst, instead of suspecting the worst. This misconception of their own preferences often leads people to choose for themselves undesirable IA behaviour (Golman et. al. 2017, p. 107-109). Threat is often measured by closeness, including emotional, geographically and social, as such people or their opinions are more likely to influence oneself and are thus perceived as having higher relevance (Menon et. al. 2006; Sweeny et. al. 2010, p. 343; Freddi 2017; Howell et. al. 2019). This leads to another form of situational affect, the presence of others during the disclosure of the information. These were highlighted by Sweeny et. al. as insufficient researched area (Sweeny et. al. 2010, p. 349). Even though there is some research that social stigma and opinions of others lead to IA (Dawson et. al.

2006, p. 764; Golman et. al. 2017, p. 119), they are still only rarely touched upon.

Other factors that can influence IA are confirmation bias, positive bias as well as groupthink and group-centrism. All four theories were explained earlier and contain the rejection of information non-compatible with their current world-view. While they can act as reason for IA, they are already encompassed by Sweeny et. al.'s avoidance of belief-change. Thus they are here only mentioned due to their influence on other kinds of IA. Notably, they can also result from other IA behaviour, e.g. confirmation bias might be the result of prior avoidance.

Appearances of Information Avoidance

Conform to the belief that IA is employed in everyday life (Sweeny et. al. 2010, p. 347, 349), the forms it can take are many indeed. The first manifestation to be explored should be source selection, as it can be seen both as result, as well as impact factor of IA behaviour (Savolainen 2014, p. 64; Addison 2017, p. 4f., 134). Source selection, which is following Manheim originally an area of satisficing research, is based upon the decisions which sources will be selected (Manheim 2014). Sources in this context is defined broadly, as any medium of information is a potential source, humans not the last. The sources are judged on professionalism, understandability, validity, media type, existence of a personal narrative or social closeness. These judgement are person dependent, as some people would avoid information from too professional sources, fearing that they could not understand it or that it might be too unspecific, while other people seek them out (Addison 2017, p. 19-21, 134f.). Menon et. al. found out that businesspersons prefer to gain information from rivals outside of their company instead of within. They concluded that most likely rivals within the company posses a greater immediate threat and such their information is avoided, while information from outside is desired (Menon et. al. 2006).

Another variety that influences other IA behaviour is mental IA. Mental IA is an umbrella term that encompasses any behaviour intended to avoid already known information. Thus researchers following Sweeny et. al. – and probably Manheim as well – wouldn't define it as IA, since mental IA only deals with information that was not avoided in the first place (Sweeny et. al. 2010, p. 342; Howell et. al. 2014, p. 102f.; Manheim 2014). However Golman et. al. include some examples that would fall under mental IA, mainly intentional forgetting or misinterpretation, as well as biased interpretation of information. The reasoning behind mental IA is that actively not considering information that is already known, is just as much IA as avoiding the reception of the information in the first place (Golman et. al. 2017, p. 99-103). Roets et. al. conclude that people high in NFCC, or through other motivational factors, are more likely to remember information that support a schema-consistent information, while they are less likely to remember schema-inconsistent or undesired information. This is known as the Retrieval Practice Paradigm and might be caused by subconsciously suppressing competing information to better recall desired ones. Such behaviour might even lead to the recall of imagined memories (Roets et. al. 2015, p. 241-243). However there is some literature, that questions the efficiency of such mental IA

behaviour. Thought suppression is a possible form of mental IA. According to its literature, by suppressing the thoughts about something, an interior monitoring process must be employed. Thus the suppression of thoughts leads them to be more easily accessible, once the suppression is stopped (Gaspar et. al. 2016, p. 545).

Self-Regulation, a term used by Addison, refers to behaviour intended to limit the exposure of information. Self-regulation has according to Addison many similarities to selective exposure, since information is avoided for fear of negative affect and it is used as a protective mechanism to prevent information overload. Thus self-regulation as Addison uses it is based upon her understanding of IA as filtering, a topic that was attributed by Mannheim to information overload research (Mannheim 2014). The main method Addison found for self-regulation was the limitation of time for seeking, followed by avoidance of specific content or negative affect (Addison 2017, p. 86-92, 128). However, self-regulation has other forms, of which some are also part of IA when using stricter definitions. Golman et. al. classified self-handicapping as a variation of IA. Self-handicapping refers to harmful behaviour, in which people decrease their own abilities or engage in tasks mismatched to their abilities, to avoid learning of a potential limit to them. Thus they can retain their former self-view, despite indications to believe otherwise. So found one study cited by Golman et. al. out that people, after taking a difficult test which they passed well despite expectations, were more inclined to take ability debilitating drugs before a second test (Golman et. al. 2017, p. 130f.).

Thematically, similar to self-handicapping is the coping strategy of seeking refuge within substance abuse. While not researched by the IA literature itself, it is seen in behaviour medicine as one of the potential forms of avoidance coping (Wiebe 2013, p. 169f.). Since IA refers to a specific form of avoidance that can lead to many of the other forms of avoidance coping, it is more than likely that substance abuse could also result from an attempt to avoid information.

Another form of IA found by Addison is delegation. To avoid information, or at least filter them, the receiving of these information can be delegated to another person. This person acts then as a filter and passes then only those information on, that they consider as non-threatening or too important to ignore. Addison emphasis that such delegation was not intended for seeking behaviour, but rather for avoidance of information, for example of

frightening medical procedures. In most cases such information needs were delegated to family members, as such social contacts are easily accessible and would know which information the recipient would want to avoid. However some people tended more to pick medical personnel, possible because they found their professionalism reassuring (Addison 2017, p. 128f.).

Lastly Addison mentions filtering as a form of IA, referring to the selective avoidance of only the most unwanted information (Ibid., p. 126). Filtering would not be a form of IA according to Manheim, but rather an aspect of information overload (Manheim 2014). Addison encompasses under filtering, both of the aforementioned forms, as well as many of the more common applications of IA. Here mainly physical avoidance and the controlling of the conversation (Addison 2017, p. 3, 129f.).

Physical Avoidance refers to any IA, in which physical absence is used to avoid information. Physical Avoidance can be planned ahead, by re-routing around an unwanted information, or spontaneously, by physical leaving a conversation or other locally confined distribution of information (Sweeny et. al. 2010, p. 341; Addison 2017, p. 3; Golman et. al. 2017, p. 99f.).

Controlling the conversation refers to actively steering a conversation, to avoid disclosure of unwanted information. Often researched in topic avoidance, this area encompass both avoidance of topics for fear of new information, as well as fear of sharing certain known information. Thus topic avoidance and IA overlap only partially (Afifi and Afifi 2009, p. 489f.; Sweeny et. al. 2010, p. 341; Addison 2017, p. 3; Golman et. al. 2017, p. 127).

Future research questions

Information can not only be avoided by leaving a conversation or actively re-routing it, but also by failing to engage in information searching. This failure of engagement is coined by Sweeny et. al. as passive IA and refers to any behaviour in which the gaining of information is bound to effort instead of the avoidance. Therefore Golman et. al. exclude this kind of passive avoidance in their review. Their understanding of passive IA seems more similar to Implicit Avoidance, however they never define it directly. Passive Avoidance is only insufficiently researched, as most researchers either focus on all kinds of avoidance or solely active avoidance (for examples of the later see Howell and Shepperd 2012 and Howell et. al. 2016). Consequently both Sweeny et. al., as well as Afifi and Afifi, a pair of researchers from topic avoidance, called for more research on this topic (Afifi and Afifi 2009, p. 507; Sweeny et. al. 2010, p. 349). The only study partly concerning passive IA was done by Andreoni et. al. (2017). Andreoni et. al. researched moral avoidance, by placing members of the Salvation Army before one or two entrances of a super market. They also instructed the Salvation Army members to either be silent or ask with a specific, non-informative phrase for donations, resulting in four different scenarios (Andreoni et. al. 2017, p. 627f., 631f.). While their experiment was flawed, as the supermarket had a third exit which they noticed only after the experiment was over (Ibid., p. 629, 633), their results were telling enough to show that some people avoided donating by using another exit, while others tried to ignore the Salvation Army, thus engaging in passive avoidance (Ibid., p. 628f.).

Another area that Sweeny et. al. highlighted in 2010 as an insufficiently researched area is the influence that the presence of others or the social context of a person have on that person's IA behaviour (Sweeny et. al. 2010, p. 349). Still there is already some research, that social stigma and opinions of others lead to IA, some of it being referenced already before Sweeny et. al. published their article (Dawson et. al. 2006, p. 764; Golman et. al. 2017, p. 119). In contrast Golman et. al. exclude these in their review on IA, as they are motivated by “wanting *others* to remain uninformed”, instead of oneself (Golman et. al. 2017., p. 119). Similarly, there is also much research concerning that people who are closer, geographically or emotionally, are viewed as more threatening, some of it already being referenced by Sweeny et. al. themselves (Menon et. al. 2006; Sweeny et. al. 2010, p. 343; Freddi 2017; Howell et. al. 2019). Only the presence of others during disclosure

itself was rarely directly researched. A specific instance is Golman et. al.'s intrapersonal strategic IA, in which IA is openly used to influence other people. Besides this instance, people can not only be viewed as threatening, but they can also provide social support, i.e. interpersonal coping resources. Thus there is much research that predicts the influence that the presence of others has on IA, but little research that actually focusses on it.

An aspect of IA that is under-represented as well in literature is temporal IA. Temporal IA refers to any IA behaviour, that is only employed for a time, before the information is engaged. Temporal IA is acknowledged by some researchers (e.g. Howell and Shepperd 2012, p. 144; Golman et. al. 2017, p. 106) and Sweeny et. al. highlighted it as an open research field (Sweeny et. al. 2010, p. 349). However currently, almost no research can be found in IA literature. Gaspar et. al. (2016) and McCloud et. al. (2017) researched avoidance of warnings against red meat or smoking. Both came to the conclusion that despite IA behaviour exhibited by the recipients of the warnings, they actually received the threatening information. Gaspar et. al. found that perceived knowledge about and perception of red meat changed nearly equally for both people who avoided the information and people who did not (Gaspar et. al. 2016, p. 544), while McCloud et. al. discovered a positive correlation between IA and information seeking related to smoking cessation. McCloud et. al. assumed that IA and information seeking were both reactions upon negative affect and that the first contact with a cigarette warning label would have had the greatest impact on it. Since such a first contact could not be reliably avoided, the increase of negative affect despite otherwise intended efforts made sense. This negative affect would lead ultimately to seeking behaviour, a result conform with their literature (McCloud et. al. 2017, p. 375f.). While both studies show that the information was received, despite efforts to avoid it, they did not research if these avoidance was intended to be only temporal. Actually Gaspar et. al. imply the opposite, having done additional interviews after a two week time frame. Gaspar et. al. only tested for IA in the first questionnaire, however. The later interviews controlled solely for attitude toward and knowledge of red meat instead of avoidance (Gaspar et. al. 2016, p. 536f., 539). Thus constant IA was assumed, but not verified. However there is a rich area of health research, which also concerns temporal IA. Research on recognition delay, most of it focussed upon cancer recognition, explores which factors influence the time until a disease is identified. While this research is focussed upon delays of the whole recognition process, including

wrong diagnoses and the time needed to be transferred from a general practitioner to a hospital or specialist (Mitchell et. al. 2008, p. 61; Moodley et. al. 2018), IA is among the factors that delay the first visit to a doctor. Namely these factors include denial and fear of confirmation. Unlike the assumptions from IA research, these reasons appear actually quite small in comparison to others (Forbes et. al. 2014, p. 582f.; Moodley et. al. 2018, p. 4, 6.), even though IA had often a significant correlation with the duration of delay (Mitchell et. al. 2008, p. 62; Moodley et. al. 2018, p. 5). However this might have some methodological reasons. Firstly research on IA is rarely referenced in recognition delay, despite including IA as one of the possible factors of delay (e.g. Forbes et. al. 2014; Moodley et. al. 2018). Secondly most of these studies are done through questionnaires or interviews with (cancer) survivors, after different intervals from the initial diagnosis and treatment (Mitchell et. al. 2008, p. 61; Forbes et. al. 2014; Moodley et. al. 2018, notably p. 10). These self reports are quite vulnerable to reporting errors or wrong memories, especially since IA is still often considered a maladaptive behaviour (Fleurkens et. al. 2014, p. 2; Manheim 2014; Addison 2017, notably p. 26f., 139). Given the context, a perception of IA as maladaptive is very likely within the interviewees, so that IA was possibly reported as less influential as it is in reality (Addison 2017, p. 139; Moodley et. al. 2018, p. 10). Despite these problems, this is one of the few areas of research, that contain results concerning temporal IA.

As mentioned, both Gaspar et. al. and McCloud et. al. have shown that even if people engage in IA, they still might gain unwanted information. Their results fit well with research on selective exposure, thought suppression and avoidance coping, which prove that these behaviours require cognitive effort and are therefore draining to keep active over longer time (Wiebe 2013, p. 169f.; Jang 2014, p. 684; Gaspar et. al. 2016, p. 545). Hence the question how well people actually can avoid information would be an interesting subject for research. However both cited examples are limited in their application. This was researched by Gaspar et. al. in an artificial environment, as they forced their participants to engage with the disliked information, instead of measuring the success of their avoidance in real life circumstances (Gaspar et. al. 2016, p. 539). McCloud et. al. on the other hand studied only the specific instance of avoidance of cigarette warning labels, which is extraordinary well researched due to its detrimental factors to personal health (for examples see McCloud et. al. 2017, p. 352). But besides this topic, little research has focused upon the difficulties of keeping IA active over time. Applicable literature on this

behaviour might be found however within research on advertisement avoidance. This form of avoidance is usually excluded from definitions of IA, as it focuses on not only unwanted, but also unneeded information. But since it examines information that are omnipresent and often avoided, results might apply to IA as well.

Positive IA is also rarely touched upon in IA research, despite being mentioned in almost every article (e.g. in Sweeny et. al. 2010, p. 350; Manheim 2014; Howell et. al. 2016, p. 820; Addison 2017, p. 144; Golman et. al. 2017, p. 98f., 124; Howell et. al. 2019, p. 153). Probably researchers are either more interested in IA that can be improved or in exhaustive research that is not limited to a specific area. The only example of research on positive IA is from Eriksson and Helgesson. In 2006, they created a questionnaire, intended to indirectly and through this covertly check for IA preferences before studies. Based on the answers people should only get as many information as they desire or necessarily need. Stealth was employed to avoid false answers due to the negative perception of IA (Eriksson and Helgesson 2006). While this questionnaire is by Eriksson and Helgesson's admission faulty (Ibid., p. 676f.), it is still one of the few attempts to capture IA desire in a neutral or positive context. However research on positive IA might itself be quite relevant, at least to challenge the assumptions of IA as maladaptive (Fleurkens et. al. 2014, p. 2; Manheim 2014; Addison 2017, notably p. 29). Following Tuominen (2004), Manheim (2014) identified the research field of moral obligation for (health) information seeking behaviour. Tuominen et. al. had found that heart surgery patients felt forced to engage in certain health information behaviour, to not be seen by the staff as maladaptive and unhealthy (Tuominen 2004; Manheim 2014). This moral obligation is also propagated in research on consumer health, whose critics found similar results as Tuominen. However unlike Tuominen's interviewees 2004, patients in consumer health were forced to seek information, instead of being compelled to leave it to their doctors. Thus critics of consumer health refer to this need to seek as “health work”, instead of seeing it as empowering like consumer health research does (Tuominen 2004; Addison 2017, p. 26-28). Considering how most researchers highlight their belief that IA can also be helpful, research upon when this is actually the case and in which situations people feel forced to engage in seeking despite their better judgement, would not only increase our understanding of IA, but also have direct applications in health care.

While there are theories of how IA behaviour is influenced by groups, namely groupthink

and group-centrism, there is no theory that tries to predict IA outside of a specific closed off group. The closest research on this topic comes in the form of a German communication study by Geiß (2015). In this study Geiß focused upon mass media reception in society, researched by respectively three telephone surveys on three main topics of the time. Geiß found interesting results about IA, mainly no direct connection to information seeking, but he used no IA literature published after 2000. Thus his definition of IA was still based upon cognitive-dissonance theory, the precursor theory of selective exposure (Geiß 2015). Though these results mirror those of current selective exposure research, the question how IA might be employed by and in populations was never exhaustively answered.

Lastly Golman et. al. mentions the possibility of IA behaviour in animals (Golman et. al. 2017, p. 96) unlike Sweeny et. al., which still assumed “humans unique ability to mental time travel” (Sweeny et. al. 2010, p. 350) as a likely reason for IA. Golman et. al. base their assumption, which they only include as a side note, on Jenkins and Boakes (1973), who tested the reaction of pigeons to stimuli. They found that the pigeons learned to ignore negative stimuli, which were those that were only given when no food was available (Jenkins and Boakes 1973, p. 206). Golman et. al. believed this to be a possible form of IA. This topic was never further explored, but might lead to a better understanding of the baselines of IA. Either by comparing interspecies behaviour or by finding a distinct boundary of what IA entails.

Conclusion

As explained, the understanding of IA varies widely between different researchers. These variations are mirrored in the possible appearances that may or may not be IA, based upon the understanding of the researcher in question. So is it impossible to give a single coherent definition of what IA actually is. There are too many varying trends and understandings of IA, often overlapping with each other, to give a more precise confinement than the literal meaning of the words. Thus IA remains as the avoidance of information. Which kinds of avoidance fall under IA and their specific names are still different from researcher to researcher.

Despite this the research at large has begun to intermingle, with researchers from different areas working together on shared articles. Promoting such collaboration was the main intent of Mannheim's and Sweeny et. al.'s articles. Furthermore some underlying trends can be identified. For example, IA is seen to be more often predicted by situations, rather than fixed traits. In addition, over time IA is becoming more and more accepted as neutral behaviour, instead of being seen as negative. Both developments are still mostly confined to the direct research on IA however. Partly responsible for the impossibility of a single definition, is the fact that IA research is including an increasing number of topics formerly belonging to other areas of non-seeking-behaviour. Thus a revision of Mannheim's framework might be useful, to understand the exact extent to which these topics shift and to identify possible similar developments in the other two areas.

Lastly, there are many theories and areas of IA that are rarely touched upon by direct IA research. Many of these theories are used in the context of different topics, which sometimes including IA as an influential behaviour. Such research might benefit from the application of the specific expertise of IA research to their theoretical framework. Further unexplored areas of IA research are already mentioned in the section on future research questions, including reasoning about their importance.

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