Social anxieties and collaborative information seeking

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ABSTRACT

Anxiety, especially in learning and decision-making, has long been a recognised factor of solitary Information Seeking. Collaborative information seeking, however, re-introduces factors of social anxiety into the search process, which were otherwise left behind in the transition between library (social) and online (individual) services. Library Anxiety Theory, for example, emphasized the social inferiority that many novice library users felt. This position paper speculates on the applicability of such social anxiety theories to the information seeking process, as novices begin to search collaboratively with other users.

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Collaborative, Information Seeking, Anxiety.

ACM Classification Keywords
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

Although the majority of our theories and models were grounded in use of libraries, they are now typically considered in the context of solitary information seeking. Recent developments in Collaborative Information Seeking (CIS) research, however, means that we must re-concern ourselves with socially focused models and theories. Most commonly, in CIS, we model relationships between collaborating searchers in terms of roles. We expect there to be searchers who differ in terms of search expertise and knowledge [13]. Further, we can consider them to be taking different tactical approaches to divide up the tasks [4]. While these role-focused models account for behavioural changes, they have so far not modelled affective changes. How do people feel being watched, when they have different roles or abilities? How do people perform if they feel anxious or judged by collaborators?

This paper begins to survey work relating to both current theories of anxiety in solitary information seeking, and then reviews a particular theory of anxiety in novice searchers in socially visible situations: Library Anxiety Theory [10].

RELATED WORK

Uncertainty and anxiety have been noted several times in related work, as playing key roles in different stages of the Information Seeking Process. Perhaps most notably, Kuhlthau [9] identified the various emotions experienced by searchers while learning. Kuhlthau suggested that people felt uncertainty and apprehension when initiating the task, but felt most confused, frustrated, and doubtful during early, less-focused stages of seeking. Later, after gathering focus in their searches, uncertainty gives way to optimism.

Focusing on decision-making during search, Schwartz et al identified that people often feel happier with their choices if there are fewer options to begin with [16]. Schwartz et al noted that people felt increasing levels of anxiety about their decision, retrospectively, as the number of options increased. Similarly, Taylor [17] provided evidence that anxiety increases with socio-organisational pressure in decision-making, being affected by both authoritarian pressure and approaching deadlines. Similarly, the Hawthorne Effect noted that people may behave differently with the pressure of being observed by authority figures.

While these models presume that users continue to search through their uncertainty, Godbold's general theory of information behaviour [2] surmises that people who experience anxiety or fear, often avoid or even dispose of information.

Although the focus on CIS is relatively recent, much work has investigated how people communicate and collaborate using technology in the Computer Supported Collaborative Work community. Some work has focused on how we can communicate emotion through digital communications [15]. Other work, particularly in domestic environments, have studied how communications can be enriched to make messages more personable and meaningful [8]. Hancock and colleagues, however, noted that communication of negative affect over technology reduced overall communication [5]. Further, the negative affect spread easily to other people in the group. Their work suggested that technology should perhaps mask emotions to reduce any negative impact on group productivity.

LIBRARY ANXIETY THEORY

Library Anxiety Theory [10] was first identified in 1986 by Constance Mellon, who ran a 2-year diary study of students' perceptions of university libraries. She identified a clear and observable phenomenon that many students, especially novice library users, felt a range of anxieties when using the library: intimidation by the size of the library, poor knowledge of the library layout, poor knowledge of the research process, and poor knowledge of how to start. Most notably, however, she observed that these anxieties were exacerbated by social inferiority feelings. Consequently, it was observed by later research that minorities often felt increasing levels of anxiety, as they did not want to appear stereotypically incapable.

Many studies have been performed to identify the particular attributes of users that influence library anxiety. Jiao and colleagues identified that age was inversely related to library anxiety [7]. They further noted, however, that age was correlated with experience, as anxiety was also influenced by frequency of library use and having had courses in library usage. Jiao and colleagues also noted that anxiety was exaggerated in male students, while others, however, saw no difference in gender [1]. Finally, Jiao and colleagues extended the idea that minorities were at increased risk of library anxiety, by noting that foreign-language students faced additional barriers to understanding signage and engaging with library staff. Later, Jiao and Onwuegbuzie noted that information technology skills had a significant impact on library anxiety, especially for those unfamiliar with technology in general [6].

Measuring Library Anxiety

Subsequent work successfully produced a validated Library Anxiety Scale, in the form of a subjective questionnaire built of likert-scale questions [1]. The Library Anxiety Scale included, as a factor, a measure of how approachable people felt the library staff were. Some of the most recent work has developed the Multidimensional Library Anxiety Scale (MLAS) [18], which was based on 6 significant dimensions:

1. Comfort and Confidence when using the library

2. Information search-stage anxiety

3. Perceived barriers concerning staff

4. Perceived importance of understanding how to use the library

5. Technological competence

6. Comfort level while inside the building

The MLAS instrument involves 53 likert-scale questions, and has been proven to be internally and externally valid.

Reducing Library Anxiety

One theory that may also be used to comprehend and analyse social anxieties is Face Threat theory [3, 11]. The theories of Face Threat are embodied by those who wish to avoid looking stupid or incompetent in front of others (losing face). Research has shown that people take active steps to maintain face, and develop behaviours that protect them from the risk of losing face. Face threat theory may explain or characterize the behaviours exhibited by those with library anxiety, such as avoiding the library and not asking for help.

Considering that people take active steps to avoid losing face, it has been common for libraries to try and avoid inducing anxiety, by making their systems more obvious, and adding clear signage. Further, universities created library-use classes as part of induction procedures, so that new students would be less likely to feel unsure about how the library worked and how to use it.

ANXIETY IN COLLABORATIVE INFORMATION SEEKING

The speculative perspective of this paper is that the re-introduction of multiple human actors to a search session must also re-introduce some social anxieties. Many of the factors in Library Anxiety Theory were exaggerated by sensations of social inadequacy. Research identified that minorities, for example, felt exaggerated anxiety because they did not want to exhibit behaviours that might be stereotypically representative of being uneducated. Jiao and colleagues also reported male library users feeling similar exaggerated anxiety. Rather than being anxious of appearing to meet stereotypes, these users were perhaps exhibiting actual stereotypical male competitiveness and not wishing to lose face amongst their friends. Similarly, Jiao noticed that young users were more likely to experience library anxiety, perhaps due to lack of library experience. In collaborative information seeking, however, it may be older users who are less experienced with how to search the web, and less able to adapt to novel technologies like CIS user interfaces.

In Collaborative Information Seeking, it is highly likely that situations will occur when people will feel anxious about how they appear to others. With colleagues or family being able to see their (accidentally) silly keyword searches, users may feel embarrassed. SearchTogether [12], for example, might make it clear that a user has searched for 'www.amazon.com' in the search box (which might be particularly embarrassing for experienced searchers). Further, CoSense [14] creates a range of overviews that create a concrete history of the things people searched for, particularly for other participants to review. Although in libraries users were nervous of looking incapable in public, novice searchers or those collaboratively searching with their superiors may feel social pressure. Consequently, models of roles from collaborative information seeking will be useful for determining possible anxiety in collaborative seekers. In my prior work, I have discussed the exaggerated role of perception in collaborative information seeking [19]. I now wish to extend the role that perception plays in CIS, with how users perceive their own skills in relation to

others. This key element of perception will have an impact on how anxious searchers may feel in the presence of collaborators.

As well as modelling the level of anxiety that collaborative information seekers may experience, we can consider how *the factors* of the anxiety may translate to CIS. In Library Anxiety Theory, for example, users reported being nervous of approaching staff. This kind of anxiety may even be a barrier to some novice searchers ever suggesting seeking collaboratively with colleagues if they feel nervous about approaching them. Anxious library users often were also insecure about the size of the library and how it is organized. For many people, the web may equally seem large and incomprehensible, so while searchers might be happy to dabble privately, they may not want to admit this insecurity in the presence of collaborating seekers. Similarly, Jiao and colleagues suggested that education about the search process is key to reducing library anxiety, and so it may be work designing collaborative information seeking software to help people in this respect.

CONCLUSION

In Collaborative Information Seeking, we have considered that different collaborators may be more skilled or more knowledgeable, and that they may therefore learn or transfer skills from their more experienced and knowledgeable counterparts. We have not considered, however, the feelings of inadequacy that such novice or inexperienced searchers may feel when their behaviours are made visible to a group. At this point, this paper can only speculate on the elements of anxiety models that may transfer from library and information science, but future work should a) be considerate of such anxieties, and b) investigate the factors of these anxieties. These insights will allow us to make accommodating design decisions, similar to those that many libraries deployed to reduce library anxiety theory.

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