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Sarah Rose Fitzgerald – University of Alabama

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## The Role of Affect in the Information Seeking of Productive Scholars

Sarah Rose Fitzgerald<sup>1</sup>

Michigan State University, 620 Farm Lane, East Lansing, MI 48824, United States

## A B S T R A C T

Carol Kuhlthau's (2004) work shows that affect is a vital part of information seeking for high school students and undergraduates. This article explores the influence of affect on research university faculty. Like beginning information users, advanced information users are influenced by their confidence, ambition, and interest in their work. This study employed phenomenological interviews to explore how scholars' willingness to tackle new areas of research, submit manuscripts to prestigious publications, approach colleagues for collaboration, and conduct literature searches with tenacity is impacted by their emotions and dispositions.

## Introduction

As Kuhlthau (2004) worked to bring attention to emotional influences on the information seeking of beginning scholars, this study seeks to bring attention to emotional influences on the information seeking of productive faculty scholars. This study addresses the information seeking of scholars in a broad sense, including how scholars seek scholarly work to read and cite as well how they seek other information for their work, such as information about prospective journals to publish in, what research topics will create the most impact, and how to keep up with new methodological strategies. Academic libraries, department heads, and scholarly publishers will be able to serve scholars better if they are more aware of their information seeking habits. Studying productive information seeking for faculty members also informs our knowledge of it for graduate students. While the information seeking habits of faculty members is often investigated in terms of their access preferences (Gardner & Inger, 2016), format preferences (Housewright, Schonfeld, & Wulfson, 2013), opinion of the library (Antonijevic & Cahoy, 2014), evaluation criteria (Nicholas et al., 2014), and information consumption levels (King, Choemprayong, Tenopir, & Wu, 2009), the emotional process accompanying information seeking for faculty members is not usually investigated. Kuhlthau (2004) refers to the feelings experienced during information seeking as “affect.” This term will be used throughout this paper.

Kuhlthau's (2004) perspective on information seeking has been the basis of many studies of grade school and undergraduate students, such as those of Wu, Dang, He, and Bi (2017), Beheshti, Cole, Abuhimed, and Lamoureux (2015), and Kim (2015). It has also been the foundation for limited work on more advanced scholars. Al-Suqri (2011) investigated whether the Information Search Process could be applied to social

science scholars in a Middle Eastern University. Since information seeking is engaged in more extensively by more advanced scholars, it is important to extend our knowledge of information seeking anxiety to those scholars. Though advanced scholars are sophisticated information users, scholars who work in institutions with very high research expectations may be under the greatest pressure during information seeking.

Scholars of faculty work, such as Hutchins and Rainbolt (2017), Parkman (2016), and Knights and Clarke (2014) often acknowledge and investigate the stress and self-doubt that often accompany such work. Stupnisky, Pekrun, and Lichtenfeld (2016) found that pre-tenure faculty reported feeling more anxiety, guilt, and helplessness with regard to research than with regard to teaching. The current study seeks to explore the impact of these feelings on information seeking behaviors.

This study draws on information behavior concepts to explore how faculty information seeking is influenced by faculty dispositions and emotional states. Information theorist, Reijo Savolainen (1995), designed a model of everyday life information seeking to describe the social and cultural factors that shape information seeking behavior. Savolainen argued that people have consistent dispositions toward making choices between information sources. He named the dispositions people have toward making order of things “mastery of life.” He outlined four attitudes toward mastery of life: 1) Optimistic-cognitive – Problems are seen as cognitive issues and individuals anticipate positive outcomes from information seeking, so they are systematic about it, 2) Pessimistic-cognitive – Problems are viewed as cognitive issues, but individuals are less optimistic about success and therefore less ambitious, 3) Defensive-affective – Individuals are optimistic about being able to solve problems, but sometimes avoid risky situations or situations in which they will be required to seek information. They are

<sup>E-mail address:</sup> [srfitzgerald1@ua.edu](mailto:srfitzgerald1@ua.edu).

<sup>1</sup> Permanent address: University of Alabama Libraries, Box 870266, Tuscaloosa, AL 35487.

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sometimes unrealistically hopeful, and 4) Pessimistic-affective – Individuals are not confident in problem solving because they feel failure is unavoidable and do not want to waste effort. According to Savolainen, an individual's values and attitudes, social capital, cultural capital, and material capital help shape their “way of life.” Situational factors such as time and health also help shape their “way of life” at any one time. In the current study, scholars' confidence level and orientation toward problem solving is examined as it relates to their tenacity for information seeking.

An investigation of information seeking is not complete without consideration of information avoidance. [Elfreda Chatman \(1996\)](#) argued that avoiding help is a way of not becoming burdensome, indebted, or responsible for reciprocating any help that might be provided. Chatman also discusses the idea that help seeking may be avoided if it is not seen as a social norm. An individual may not ask for help from someone who can provide it because they do not see it as an appropriate request based on their social relationship with the other person. Though Chatman's research was conducted with information-impooverished populations, her observations about information avoidance apply to information rich populations as well. Scholars, who are highly educated information users, may feel pressure to appear to be experts, and may be therefore be embarrassed to ask for help.

## Methods

This study was part of a larger research project that investigated several aspects of the information seeking of productive scholars in the field of Higher Education. This article uses Higher Education scholars as a case to explore the influence of affect on faculty information seeking. To investigate faculty information seeking, I conducted phenomenological interviews with 14 productive scholars of Higher Education. I used a critical incident technique ([Flanagan, 1954](#)) to help scholars recall their experiences accurately. I asked scholars to recall the research strategies that went into a recently published or presented piece of scholarship to stimulate memories of specific experiences rather than allow them to generalize about their research habits. This method has previously been employed by [Tenopir, King, Edwards, and Wu \(2009\)](#) to elicit authentic memories of information seeking experiences in scholars. My sample included six women and eight men. Two scholars in the sample identified themselves as having been raised outside the United States. One scholar was a clinical professor, two were assistant professors, two were associate professors, one had just earned associate status, and the rest were full professors. My participants include Asians, an African American, a Latina, and Caucasians.

I drew my sample from Higher Education faculty in doctoral degree granting programs. To identify scholars from programs with high research expectations, I limited the sample to scholars from institutions that are part of the Association of American Universities (AAU). My participants came from six universities in the Midwest. My sample included scholars whose H-indices as calculated by Scopus ranged between 3 for younger scholars, up to 14 for prolific full professors. To place these numbers in perspective, Ernest Pascarella, the most highly cited scholar in the field ([Budd & Magnuson, 2010](#)) has a Scopus H-index of 31 and Arthur Chickering, who is also in the top 20 ([Budd & Magnuson, 2010](#)), has a Scopus H-index of 4. Many of my participants have been cited hundreds of times. They have published in respected journals such as *Teacher's College Record*, *Educational Researcher*, *American Educational Research Journal*, *Harvard Educational Review*, *Journal of Higher Education*, *Research in Higher Education*, *Review of Higher Education*, and *Journal of College Student Development*. Several of the scholars who participated have also served on the editorial boards of several of these journals. Several of my participants have authored or edited books that are used in the instruction of graduate students in the field of Higher Education.

## Theoretical framework

This study is intended to build upon the work of [Carol Kuhlthau \(2004\)](#). She originated a theory of information behavior called the Information Search Process (ISP). She argued that previous theories of information behavior were focused on the “bibliographic paradigm,” collecting and organizing information, not the user's problems and processes. She sought to incorporate thought processes and emotions into her theory of information behavior. Kuhlthau's Information Search Process consists of six phases: *initiation*, *selection*, *exploration*, *formulation*, *collection*, and *presentation*. *Initiation* is the recognition of an information need. With it comes uncertainty. Once users *select* a topic, their uncertainty diminishes. When users begin the *exploration* stage, they sometimes encounter information that conflicts with their prior knowledge or with other sources, which may increase their anxiety. The *formulation* stage involves evaluation of information encountered. At this stage, users make meaning of what they have found. Conflicting information is resolved through a personal construction of the topic and uncertainty decreases. Once the user has a focused topic, they feel confident to *collect* a set of resources on it. Finally, the user documents and *presents* the information they have gathered to their audience. This stage is accompanied by satisfaction or disappointment with the project. The role of affect in information seeking has previously been studied mostly in beginning information users, but the current study explores the impact of affect on advanced information users.

[Kuhlthau \(2004\)](#) divides the search process into three sections: actions, thoughts, and feelings. As Kuhlthau reasons, understanding the feelings of our patrons can help librarians improve our service to them. Kuhlthau argues that a feeling of uncertainty is necessary to start the process of information seeking. As users move through the search process, their thoughts become more focused, their interest increases, and their actions move from exploration to more focused searching. They begin by feeling confused or frustrated and find clarity and confidence as they identify a sense of direction. Users build confidence when they encounter information that corroborates what they already know. Although Kuhlthau's studies were done primarily among high school and undergraduate students, thoughts and feelings are important factors in shaping the information seeking behaviors of all information users. Though scholars have more familiarity with information seeking than young students, their work can also involve anxiety. The pressure to publish can affect their attitudes during information seeking. The data from my study was coded for Kuhlthau's stages of information searching and the emotions associated with them.

## Findings

In [Kuhlthau's \(2004\)](#) model of information searching, the cognitive state of a researcher in any stage of a research project is accompanied by a corresponding emotional state. As I heard from my faculty participants, faculty work can involve many emotional ups and downs. Academic writing is difficult work and it nearly always results in criticism from peer reviewers. One associate professor described the disheartening feeling of being rejected after revising two articles for journals, saying

There was so much effort and so much agony, everything, and then you get rejected. So I was really devastated. And then I stopped working after that rejection, two rejections, I kind of stopped working for, I think, a few months.

While peer review feedback is useful information that can improve a scholar's work, it also comes with emotional consequences that can affect that work. However, I also heard from scholars about supportive peers and mentors who helped them persevere in the face of criticism and rejection. An accepted article, praise from a colleague, or recognition from an association can have a positive emotional impact on a scholar. It is important to have people who will balance critical feedback with positive support.

Rather than serving merely as quality filters for scholarly work, editors of scholarly publications sometimes have to fill the role of interpersonal arbiters. One well-cited scholar recounted his feelings about a peer review experience, saying,

We feel like we had a reviewer that is unconvinced by anything and seems determined to make our life as difficult as possible. So we're trying to respond to things and be open minded, but we feel like we're now in this abusive relationship with this reviewer. And the editors are trying to just, I think the editors are sympathetic and they want it to get published, but they also have to listen to the reviewer and to us, so you know, we're trying to be diplomatic.

Because scholars' feelings of identity and value are wrapped up in their research outputs, criticism can feel like a personal insult. Finding a journal where the editor shares one's epistemological paradigms can help mitigate some of this heartache.

Indignation over negative reviews is a necessary reaction for continued scholarship. Tenure committees reward the number of publications you produce. They do not punish you for the number of rejections you receive. One needs confidence and resiliency to continue to work. For example, one of my participants told me a satisfying story,

There was one rejection that made me pretty mad, and I didn't do anything, and I sent it to an even higher tiered journal and it got 'minor revisions' right away because that particular review rejection, was basically discrediting the importance of community college related research. And the notes were pretty much about: 'this is not an important study, look at something else, rather than two year colleges'. And so that was probably the only case where I felt there was nothing valuable in that kind of feedback. And so I did not change a thing and I sent it, almost as revenge, I sent it to ... a higher tier and at that one it got 'minor revision' right away, so that was like sweet revenge.

Confidence and persistence such as this are needed to be able to go on seeking information and writing, instead of getting discouraged. However, you also need to, as one of my highly productive participants said,

Get over the indignation, take a few deep breaths, and then take it as data, right? Do a content analysis, thematically figure out where, even if it makes you indignant, maybe they're right, and then for me, I treat the critique as always, even if I don't agree with it, the critique means I haven't communicated myself in a way that everybody could hear what I'm trying to say.

This scholar's advice is an endorsement of Savolainen's (1995) "Optimistic-Cognitive" information seeking disposition. She recommends looking at criticisms as challenges that can be overcome with effort rather than reasons to lose confidence in one's work. There are certain dispositions that lend themselves to the profession of academia. Overconfidence might lead a scholar to dismiss a valid critique. Scholars must be open to feedback or conflicting information if they are going to appeal to reviewers and create thorough analyses. Otherwise, they can waste time resubmitting an article without changes it needs. A lack of confidence can also prevent a scholar from making the effort required to produce new scholarship.

Kuhlthau (2004) argues that uncertainty always accompanies the information need that begins any research project, and this can cause anxiety. According to Kuhlthau, this early stage of a research project is when searchers are most in need of mentorship to guide their habits and build their confidence. Just as the beginning of a research project is characterized by doubt, the beginning of a research career entails uncertainty in oneself due to a lack of an established scholarly identity. For example, one early career scholar recounted an experience with a bad review, saying, "When I ... got the reviewer's comments, it rocked me to the core, because I was like, 'Am I in the wrong field? Am I doing the right thing? Maybe I shouldn't even be

here'." This quote and similar sentiments expressed by other participants helped me conclude that an academic career is like the beginning of a very long research project. Although my interview questions focused on individual projects as a representation of faculty information seeking, the arch of time that repeatedly emerged from their narratives was the trajectory of their careers, not the individual projects they worked on. As I learned from my participants, at the beginning of an academic's career, they have fewer experiences to base their self-confidence on, and tenacity can make the most difference. At the beginning of their careers, scholars are still learning how to perceive themselves from others in the field, rather than relying on previously formed internal opinions of themselves. Scholars may be most open to help from librarians or peers when they are new and do not have a lot of experience. A bad experience early in a career or collegial relationship can stick with a scholar and discourage them from seeking help in the future. It is important for scholars and librarians to create supportive environments for one another to encourage persistence, build confidence, and bolster the quality of research produced in the field. This includes writing constructive peer review feedback.

Just as a blow to the confidence is most impactful early in one's career, a boost to the confidence from scholarly success is most impactful early on as well. One scholar with a long successful career told me "after a number of years, it's like anything if you do it repeatedly. The highs aren't quite as high. Because you have demonstrated to yourself that you can do this." He felt that as he neared retirement, he was less motivated to continue pursuing prestigious publications.

A sustained record of successful publications and presentations builds confidence in a scholar to enable them to withstand criticism more readily. In line with the theme of building confidence over a career was an associate professor's view of herself, "Not now, but maybe ten years later, I feel like I really can talk to the general public about my expertise. Then maybe, but right now, I think I need to do more work on this subject." Though she has achieved a strong reputation in her research area, she still feels as though she is not yet ready to be a public spokesperson for her research area.

#### *Affect and research topic selection*

One's predisposition toward particular types of work drives how much one is willing to invest in learning to do that work. This might lead a scholar to avoid research methods in which they take little pleasure. Alternatively, collaboration can help to complement a scholar's strengths and weaknesses. For instance, one qualitative research expert told me of quantitative research,

Frankly, I don't have a ton of interest in it. I don't get a ton of joy out of trying to get a program to compile or something. And so I work a lot of times with people who are perfectly happy to work on those kind of questions, but don't want to deal with the theory side or just want to talk through research assignments. And then, you know, we have a ton of expertise here in terms of quantitative methods ...all of them at various times I've talked with about quantitative methods because ...it's moving so fast that it's very easy to get caught behind or be missing technical details.

His point of view is that the individual who enjoys a particular kind of work will do the best job of performing it. Several participants also mentioned that the added variety brought to a project by a new perspective can make it more enjoyable as well. This highlights the importance of creating networking opportunities for scholars within and between universities.

A scholar's identity and affect are interrelated, and influence their work. Minority scholars or those who study minority populations may be less confident in their work's likelihood to be published, and may choose to submit to less prestigious journals. An example of this issue

was reported by one scholar who described his decision to submit to a journal geared toward a specific student population, saying,

I chose not to send it to the top number one journals in higher ed., like the *Journal of Higher Ed.*, and *Review of Higher Ed.*, *Journal of College Student Development*, to be quite frank, where some of this work is not always valued or appreciated. I think that it was very likely if I had sent it to some of those journals, to get either a desk reject because the sample size was so small, or for someone to say you know, unfortunately the implications of this are to a very narrow population.

He added that,

In making that decision, part of me thought, it's a lower ranked journal, it's a lower tier journal, so it's not that any old thing will do, but I don't think I pushed the piece to be the piece that I would have, well I didn't push the piece to be the piece that we ultimately produced.

These doubts about acceptance and feelings of marginalization perpetuate the problem of diminished visibility for these scholars and topics. Though Savolainen (1995) argues that people generally have consistent dispositions toward making information seeking choices, scholars in my study reported having different levels of confidence and ambition for different publication topics. Scholars have different dispositions toward different research projects based on past successes or failures with each research topic. Conviction in one's abilities is important, but conviction in the importance of one's area of research is also important. A growing body of scholarship on a previously marginalized topic, especially in prestigious publications, can encourage more publication on that topic. It is clear from the narrative of this prolific scholar that much confidence is required to pursue work on minority populations. This must lead us to wonder how many less celebrated scholars have turned away from such topics as too risky for their careers. It should also encourage us to support and celebrate the work of graduate students and scholars who pursue challenging research topics.

#### *Affect and literature gathering*

An emotional process determines the amount of literature searching a scholar does. Curiosity and excitement can drive a search. As you begin to grow bored with the repetition of the literature you find, and grow frustrated, you end your search. One participant told me

You've got to just be willing to ask, ask again, search, search again. That's a big part of the battle. You've got to be willing to just do it over and over and over again. You know, with slightly different angles and techniques and words every time.

When the fun of discovery dissipates, you stop looking for more. Your persistence determines your success. Enjoying your work can give you the persistence you need to do it well. Fear of not making tenure can also be a good motivator for continued effort.

The literature review is about building confidence in yourself and your audience that you have an important topic. One participant described his motivation for doing deep literature reviews,

I like to find the timeless elements of the research that I do and so one of the things I often times do is try to find the oldest article that I can find, on a particular topic and read that one really carefully and look really carefully at their bibliography to see how far back I can go. And more often than not, I can track stuff back pretty far. And so that gives me some extra confidence when I go and I write about this, to be able to say, 'hey this is not a new topic, this is not a new idea. It's been around for a long time'. And I think that there's a good framing element to communication that can occur by giving that kind of historical context.

This quote illustrates why it can be difficult for a scholar to stretch a field into new areas of research. It is more difficult to build a case for its

importance based on the existing literature. Even for scholars who are arguing against a tradition of literature in their field, discussion of that tradition is important to establish credibility with their audience. Without a historical record to point to, it is difficult to build confidence in yourself or an audience. In lieu of a history of literature examining a topic, well-established scholars can rely on their personal history of producing strong work to build confidence in themselves and their readers that a new topic has value to the field.

A scholar's impression of their own capabilities and the acceptance of their field can influence how ambitious their work is and therefore shape the information they need for their work. A lack of confidence or a lack of trust in reviewers and publishers can keep good work from getting done or publicized. However, when coupled with confidence, lack of trust in reviewers and publishers can also fuel a scholar to redouble their efforts. For instance, one scholar who studies an area of research that has brought her criticism from other scholars told me, "I would rather over cite, than under cite, especially given the work we do, community college scholars." The criticism she has received has spurred her to make her work irrefutable.

#### *Affect and help-seeking*

In line with Chatman's (1996) theory of information avoidance, several of my participants worried about becoming burdensome to senior scholars or to librarians who they might approach for help. One assistant professor described her meticulous efforts to make as little work as possible for the people she went to for advice,

I feel like they're so busy and I feel always really badly taking up their time, so what I usually do, Sarah, is I usually spend a ridiculous amount of time summarizing the paper, summarizing my struggle, asking really pointed questions.

This attitude reflects the reality that the relationships one builds as a new faculty member matter to later help-seeking endeavors. There was a pattern among my participants of not wanting to bother people, which may run parallel to the pervasive feeling of having too much to do. Busy faculty members understand that future help from another scholar or a librarian depends on the way they approach that scholar for help. Asking for assistance can be the beginning of a fruitful relationship, or it can sour a relationship that could have been fruitful.

Sometimes scholars do as much information seeking as they can through impersonal sources in order to avoid appearing ignorant in front of their colleagues who they might ask for help. One highly cited scholar told me she Googles journal titles outside her field to check whether they are well-known in order to avoid embarrassing herself by asking a colleague in that field. Many participants spoke of reading scholarship as equivalent to interacting with the scholars who wrote it. This allows them to engage in interaction with those authors through their work without the fear of appearing ignorant in front of a respected colleague. For instance, when I asked one scholar whom she turns to for advice, she replied, "I don't want to bother people, but I do draw upon a lot of the good work done by scholars in our field. So in that sense, they are my influences." Another scholar answering the same question said, "I ended up, you know, not directly in person, but consulting the literature, so the works of people like Stephanie Waterman and other indigenous scholars." Later in the interview, when asked how he met one of his research collaborators, he responded, "I met her work first." These quotes exemplify the way scholars portrayed publications as personal interactions with their authors, which often lead to two-way communication later. Scholars reported that their choices about who to ask for advice depend on their hierarchical relationship to them. The more prestige difference there is, the less scholars feel entitled to approach a colleague. Once a scholar is well versed in the literature of their field, they feel more confident to approach their colleagues in person. Librarians can be of most help before these disciplinary or institutional connections have been formed. Establishing approachability

with a few faculty members can help librarians develop relationships with faculty that can spread among departments over time.

It helps to have a colleague to discuss research ideas with or to get you through your frustration with negative reviews. However, a lack of confidence can be a barrier to forming advantageous collegial relationships. One well-cited scholar told me that her ideal co-authorship relationship is one in which,

We can sort of begin to communicate in shorthand without having to worry about hurting people's feelings. Which is important to me. I need to be able to just give exceptionally blunt feedback or really direct email comments without feeling like, oh my gosh, this person is oversensitive.

Established scholars are likely to have experience with criticism in order to be comfortable with this sort of relationship. A rising scholar might need to simulate this confidence without feeling it in order to gain the respect of a valuable co-author.

## Conclusions

Information seeking and sharing is influenced by the supportiveness of the community of scholars they work in. This includes senior scholars in the field, scholars outside the field, and librarians. An individual scholar's disposition may determine how willing they are to seek information and help, which can determine how successful they will be as a scholar. When scholars choose work they feel confident in carrying out and interested in doing, they may end up with better results than when they try to push themselves outside of their comfort zones. Seeking help for work they do not feel comfortable with can strengthen the quality of their work and develop their interpersonal network. A department of supportive colleagues can lead to greater confidence and better work. Scholars should be aware when writing reviews and evaluating their peers that they are affecting their emotional state as well as the cognitive state of their work. The purpose of such feedback is to challenge them to improve their work and reward good work, not to punish.

Senior scholars and librarians have an opportunity to reach out to younger scholars or those who are new to an institution who may feel nervous or burdensome when approaching successful senior counterparts just as Chatman (1996) described in the behavior of those who felt themselves to be outsiders in a social context. One way to combat the feeling of being a burden to those you ask for help is to offer help rather than ask for it. By investing in helping someone else, you pave the way to make yourself more comfortable in asking them for help in the future.

Kuhlthau (2004) identified a “zone of intervention” in her “Information Search Process” at which researchers were most receptive to aid from an instructor. Likewise, there are particular points in scholarly careers at which scholars will be most receptive to aid from librarians or other scholars. Librarians can be of significant help to beginning scholars who are getting used to a new institution or used to teaching for the first time. These circumstances make asking for help less embarrassing and less disruptive. They are also times when people need more help. Help at this stage of a career can establish trust with a scholar to create an ongoing relationship. As Kuhlthau discovered in her studies, attempts to intervene during times when a researcher has a strong level of confidence may be intrusive, distracting, confusing, or disheartening. At particularly frustrating times in a scholar's career, such as close to an approaching deadline, attempts to help may also be overwhelming. If we view a research career as an extended “Information Search Process,” then we might also divide careers into stages with associated affective states as Kuhlthau does. At the beginning of a career, a researcher may be exploring their scholarly ambitions and formulating their network and literature base. This stage corresponds with uncertainty, just as the initial stages in Kuhlthau's model do. Gradually through their careers, researchers establish firmer objectives and

confidence, just as searchers in the late stages of Kuhlthau's Information Search Process do. These cognitive and emotional changes lead to changes in information seeking behaviors. A career may also consist of a series of these arcs as scholars take up new subspecialties. Each time a scholar embarks on a new research trajectory, there is an opportunity for a librarian to become a guide to a new set of research tools for this new methodology or parallel set of literature.

If we view the academic career as an extended Information Search Process, as I have suggested, then we might think of graduate school as an *initiation* stage, in which a scholar recognizes an interest in scholarship and begins to *select* an area of research, but feels uncertainty about their choices and abilities. The pre-tenure portion of an academic's career may be viewed as an *exploration* stage, in which their knowledge of their topic and themselves as a scholar deepens and becomes more complex. At this stage, scholars face high expectations for publication, which can cause anxiety. When an academic achieves tenure, their identity as a scholar takes *form*. They amass a repertoire of literature, theories, methods, and colleagues they are expert in working with, just as a beginning researcher amasses a *collection* of literature that answers their research question. At this stage, they can *present* and communicate their area of expertise to a variety of audiences.

Viewing academic careers as extended ISPs could be helpful to librarians who are interested in helping faculty become acclimatized to their roles, make informed choices about the publication of their research, and maximize the dissemination and impact of their writing. Consideration of the role of affect in the information seeking of advanced information users also prompts future research questions about who stays in academia and who leaves. How do experiences with conference and journal acceptance and rejection play into which graduate students become academics and which leave academia? How do relationships formed in graduate school play into which graduate students pursue research careers and which ones pursue teaching focused institutions?

## Conflicts of interest

None.

## Appendix A. Semi-structured interview questions

### General:

How do you begin a new research project? Why do you do it that way?

How do you find the articles and books you read for research? Why do you do it that way?

What factors do you consider when evaluating whether to use an article/book for your research?

What challenges do you face in finding information?

How do you decide which journals to read or skim?

How do you decide which databases or search engines to use?

Who do you go to for advice about research? Why these people?

What kind of advice do you ask for?

How do you choose where to publish?

How do you decide which literature to cite?

### Specific to a piece of writing:

How did you begin this project? Why?

How did you find the works you cited? Why?

What helped or hindered the information seeking process?

Who was involved in your thinking about this project? Why?

How did you choose where to publish this work?

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