

Expanding the scope of affect: taxonomy construction for emotions, tones, and associations

Emotions,
tones, and
associations

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Abstract

Purpose – The purpose of this paper is to provide an examination of emotional experiences, particularly how they are situated in the readers' advisory (RA) literature and the literatures from a variety of outside disciplines in order to create taxonomies of affect from this context.

Design/methodology/approach – The approach of this study is twofold. First, this work reviews the literature on affect in Library and Information Science (LIS) and ancillary disciplines in order to understand the definition of affect. Second, using extant taxonomies and resources noted from the literature review, taxonomies are created for three aspects of affect: emotions, tones, and associations.

Findings – This paper contextualises and defines affect for the LIS discipline. Further, a result of the work is the creation of three taxonomies through an RA lens by which affective experiences can be classified. The resulting three taxonomies focus on emotion, tone, and associations.

Practical implications – The taxonomies of emotion, tone, and associations can be applied to the practical work of bibliographic description, helping to expand access and organisation through an affective lens. These taxonomies of affect could be used by readers' advisors to help readers describe their desired reading experiences. As the taxonomies have been constructed from an RA perspective, and can be applied to the RA literature, they could expand the understanding of RA theory, especially that of appeal.

Originality/value – This study furthers the exploration of affect in LIS and provides tangible taxonomies of affect for the LIS discipline in an RA context, which have not been previously produced.

Keywords Reading, Taxonomy, Catalogues, Affect, Cataloguing, Social tagging

Paper type Research paper

Introduction

This paper provides a discussion and application of affect for the library and information science (LIS) field, specifically for those sub-disciplinary themes of bibliographic description, access, and readers' advisory (RA). It offers an in-depth exploration of affect, which the *Oxford English Dictionary* defines as to “touch the feelings of; move emotionally”, and as “an inner disposition or feeling, rather than an external manifestation or action” (*Oxford English Dictionary*, 2017). Affect has been investigated in LIS, in limited ways, mostly through the lenses of bibliographic description and RA.

RA is a central, and longstanding library service in which “the entire point [...] is to reach readers” (Wyatt, 2007, p. 30), and to provide the right book in the hands of the user at the right time. This paper was informed by our previous work that examined the bibliographic records of 22 fiction titles in Canadian public libraries. Specific emphasis was placed on examining assigned Library of Congress Subject Headings assigned to the titles, as well as user-contributed metadata in these records in the form of tags and reviews. We discovered that subject headings assigned by library staff emphasised the more neutral, or objective aspects of the titles, such as geographic location, genre, period, and subject. The user-generated content, on the other hand, focussed on the impact the books had on the users in three distinct areas related to affect:

- (1) the emotions that they experienced while they read the books;
- (2) the tones of the books that they experienced; and



(3) the associations or memories that the books invoked in them (Pecoskie *et al.*, 2014). Theory into RA suggests that there is a flexible set of fiction access categories for traditional RA service (Adkins and Bossaller, 2007; Ross, 1998; Ross and Chelton, 2001; Saricks, 2009), but these categories do not cover the aspect of affect in much detail. These RA-related access points cover the following areas:

- award/recognition;
- characters' occupations;
- characters' relationships;
- emotional experience;
- ending;
- explicit content;
- factual information;
- genre;
- intended audience;
- literary influences;
- pacing;
- plot development;
- readability;
- real events;
- setting;
- size or length of the book;
- specific characters;
- subject;
- subjects; and
- time.

The only access point in the above set of categories that pertains to “affect” is “emotional experience”, a term that is very broad in scope, and which does not provide further delineations as to the specific types of emotion.

This study examines the affective aspects of reading on library users from the readers' own perspective. Focussing on understanding affect in the reading experience will help both readers' advisors and readers as they work to suggest books to readers and choose books for their individual context. More specifically, the objectives of this paper are: to provide an in-depth examination of emotional experiences, and particularly how they are situated in the RA literature, and discussed in the literatures from a variety of disciplines; and to create taxonomies of affect by which bibliographic records can be described and accessed in library catalogues, and by which readers' advisors can help readers describe their desired reading experience.

Based on the results of our previous analysis of the user-generated metadata derived from 22 fiction titles (Pecoskie *et al.*, 2014), for the purpose of this research, “affect” was divided into the following categories:

- Emotions pertain to “the subject aspect of feeling or emotion” (Princeton University, 2017).

- Tones pertain to “the quality of something (an act or a piece of writing) that reveals the attitudes and presuppositions of the author” (Princeton University, 2017). Tones tend to evoke reactions such as laughter, fear, and horror, and are thus related to affect in that the tone of a book can evoke a feeling or emotion. So, a book with a frightening tone can cause the reader to experience the emotion of fear.
- Associations pertain to “the process of bringing ideas or events together in memory or imagination” (Princeton University, 2017). For example, a reader’s association with motherhood can impact his or her emotional response to the book about children.

Next, the scope of RA is explored, and affect as studied in a variety of literatures, both internal and external to LIS, is examined to understand the nuances of the definition of affect.

Parameters of RA

The approach taken to RA is informed by our previous work, which argued that the use of social discovery layers in public library catalogues can offer important new ways to complement the traditional face-to-face RA model, which includes providing an online environment where users can establish a social space where they share and discuss common reading interests. This social space provides a grassroots and democratic RA service, whereby users can comment on titles read, make recommendations for future reading based upon such ideas as shared interests, and classify items in the catalogue with their own descriptors (or tags), or reviews (Pecoskie *et al.*, 2014). RA can be facilitated by the catalogue in cases where readers either do not wish to engage in a one-to-one interaction with library staff, or do not have the opportunity to do so because of a lack of easy access to a physical library.

Affect in the RA literature

Historically, RA focussed on aspects related to the story or the book (Saricks, 2005). Little to no historical RA literature considers the affective aspects of the book on readers: “studies on fiction readers have tended to focus on the cognitive aspects of book selection while overlooking affect” (Ooi and Liew, 2011, p. 753). Saricks used the terms “appeal elements” or “appeal” (2005, p. 41) to refer to “the elements of books to which a reader relates” (2005, p. 42). Saricks (2005) divided appeal initially into four elements: pacing, characterisation, storyline, and frame, which she later expanded to pacing, characterisation, storyline, tone/mood, frame/setting, and style/language (Saricks, 2009). It is interesting to note that with the exception of tone/mood, these elements still pertain to the work itself, rather than to the readers’ affective response to the work. Although tone is certainly related to the content of a book, it is perhaps more closely related to the readers’ affective response to the book. So, for example, one reader could find a book darkly humourous, while another reader perceives the same book to be disturbing. Tone/mood is not subdivided any further.

Neil Hollands and Jessica Moyer proposed the need for better-defined appeal terminology, stating that “definitions within our vocabulary of appeal need to become more exact, and broad categories of appeal must be broken down into component parts. A more exact vocabulary will pave the way for better communication between professionals and open the door to classification systems that go beyond content-focused subject headings” (as cited in Caplinger, 2013, p. 288). Caplinger (2013) and the team that works with the book recommender database NoveList (www.ebscohost.com/novelist) identified four appeal elements: storyline, pace, writing style, and tone, where the latter refers to the emotional core of the book. Once again, with the exception of tone, these elements pertain to the properties of the book, rather than its effect on the reader. Caplinger posited that appeal access points in a book record augment standard cataloguing information on genres and subjects, and make it possible for users to conduct appeal-based searches.

Adkins and Bossaller (2007) compared the use of fiction access points assigned to 21 works in two online bookstores, two RA databases, and two library catalogues. The authors noted that librarians tend to focus on the objective characteristics of books, such as author, name, nationality, or period of activity. The physical collection of materials in libraries has been organised traditionally by genre, such as mystery, romance, and so forth, based on the idea that books in the same genre will present similar types of stories. Reader-oriented classification schemes, on the other hand, would be more helpful if they focussed on the affective nature of fiction. This study identified 35 types of access points, of which the emotional experience the book produced in the reader was found to be expressed better in online bookstores and the RA databases, rather than in library catalogues. Emotional experience was determined to include the following aspects: the intended readers' experience of the book (e.g. entertainment); the mood invoked in the reader; and the emotional content of the book (e.g. uplifting). Emotional experience is thus used as a blanket term to express any type of affect related to the reader, with no clear distinctions made between the emotions invoked in the reader and the perceived tone of the work.

Dali (2014) argued that "if we concede that appeal is a cornerstone of RA, it should embrace a much more significant human element and account for the readers' characteristics and social environment, which necessitates a new definition of appeal" (p. 24). Dali redefined appeal as "the power to invoke interest in reading and to set off an action of reading" (p. 24), rather than the more standard focus on the elements or characteristics of books. Dali divided appeal into two elements: book related (e.g. writing style and genre) and reader driven: curiosity; personal situation, needs, and mood at the moment; advice of friends or specialists; overall popularity of a title, author, or series. Of these elements, "mood at the moment" is most closely related to affect, but is not subdivided further.

Naik (2012) examined how readers in the Goodreads (www.goodreads.com) community discuss books, and assist each other in finding books to read in organic, natural, and sometimes messy online discussions and comments. Naik analysed the first 30 users reviews of five fiction books, and tabulated the appeal terms used to describe each book. Naik used four appeal elements based on Saricks (2005): pacing, characterisation, storyline, and frame. It is interesting to note that these four elements pertain to aspects found in the book itself, rather than to the effect that the book has on its readers. Naik found that the appeal terms used by participants suggest certain themes and trends: each book has at least one appeal category that seems to be its strength, or one that tends to ignite the most discussion.

Ooi and Liew (2011) sought to discover what prompted readers to choose particular fiction books from the public library, and what sources readers relied on to find information about fiction books. The authors noted that "within information science, studies on fiction readers have tended to focus on the cognitive aspects of book selection while overlooking affect" (p. 753). The authors interviewed 12 readers to explore the influence of the following factors on their book choices:

- readers' personal characteristics and circumstances;
- intimate personal networks such as family and friends, and wider personal networks such as book clubs;
- mass media such as the internet, television and radio; and
- institutional sources such as the public library.

Ooi and Liew found that along with their personal values, participants' reading tastes guided what they chose to borrow and read. Fiction readers tended to select books by appeal factors, rather than subject. Quality of prose was important to some participants while for others, character, storyline, setting or tone determined the book's appeal. Once again, with

the exception of tone, these appeal elements pertain to characteristics of the book, rather than to its impact on the reader.

Pejtersen and Austin (1984) argued, “if a fiction retrieval tool is to perform efficiently, it has to strike a balance between subjectivity on the one hand, and control on the other” (p. 26). The authors constructed the Analysis and Mediation of Publications (AMP) classification system for fiction, based on an empirical analysis of fiction readers’ requests. In total, 300 user-librarian conversations in real-life situations were investigated. AMP consists of four dimensions: subject matter; frame (period and location); author’s intention; and accessibility (e.g. readability). Affect is subsumed under “author’s intention”, which covers two criteria: emotional experience; and cognition and information, the latter of which covers the theme of a novel, the author’s attitude towards the subject, and the set of ideas and emotions that the author wants to communication to his or her readers.

Ross and Chelton (2001) identified the following elements that affect people’s choices of what works of fiction to read:

- the reading experience wanted (e.g. positive, easy);
- sources about new books (e.g. bookstores);
- elements of a book (e.g. length, subject);
- clues on the book (e.g. genre, author); and
- cost to access the book (e.g. physical availability; reading duration).

With the exception of “reading experience”, these elements refer largely to the contents of the books. Reading experience is not subdivided into specific types of affect.

Stover (2009) discussed how readers in book-centred social networking sites express what they like about what they have read or wish to read, and pointed to the importance of classifying fiction books by feeling rather than subject, for example, exciting, or intricate, vs houses, or shops: “How wonderful it would be if we “could classify books – fiction, especially – by ‘feeling’ rather than by subject, or adjectivally (big, fast, exciting, intricate, thought-provoking) instead of nominally (horse, houses, shops, satellites, cheese)” (p. 244). Stover suggested that these bibliosocial networking sites are getting the vocabulary of appeal out to readers, but provided no suggestions about specific ways in which to describe this appeal vocabulary.

According to Trott (2008), readers’ advisors face competition from services such as LibraryThing (www.librarything.com) and Goodreads, which offer themselves as sources for readalikes. Readers’ advisors also need to consider how best to blend the concepts of appeal that have been developed over the past 20 years, with the idea of readers tagging books with their own headings. Reader tags offer readers’ advisors ways to discover more about how readers describe their own reading interests.

Librarians are considering new ways to think about how readers react to, and interact with, what they read. Specific emergent areas of appeal are: refinements of how appeal assesses the reading experience, using such terms as description, language, learning, experiencing, settings, and style; fine tuning of terms used to express the feelings a book evokes, such as affect, mood, and tone; and new aspects related to story using the terms content, genre, subject, and theme (Wyatt, 2007).

While the concept of affect certainly plays an important role in RA literature, its application has thus far been limited primarily to the broader concept of appeal. As has been shown, elements that comprise appeal focus largely on the characteristics of the book itself, such as its genre, pacing, storyline, and so forth. While these characteristics certainly play an important role in determining why certain books appeal to certain readers, they do not reflect closely the affect, or emotional impact, the book has on a reader. Elements such as

“emotional experience” or “tone” are certainly more closely related to affect, but they are not expanded sufficiently to serve as useful bases for taxonomies for emotions, tones, and memories. For further direction, exploration of the literature in other fields is necessary.

Emotions: contextual literature

The concept of emotions has been studied extensively in the field of psychology, and particularly in the more specialized fields of cognitive and social psychology. Finding a uniform definition for what constitutes an emotion has proven to be a difficult task: “Many psychologists doubt that emotion can be defined in strictly mental, strictly behavioural, or strictly physiological terms. Each definition can be met with counter examples” (Fehr and Russell, 1984). Much of the discussion in these fields has centred around the concept of “basic emotions”. Wittgenstein’s family resemblance theory postulated that items thought to be connected by one essential common feature may, in fact, be connected by a series of overlapping similarities, where no one feature is common to all (Wittgenstein, 2009). Eleanor Rosch (1973, 1975) proposed the notion of basic-level categories in her prototype theory, which is a mode of categorisation where some members of a category are more central, or basic, than others; for example, a chair is considered more representative of types of furniture than, say, a bar stool. Basic-level categories are the most abstract categories of which a representative image can be formed, such as the categories named more quickly by adults or those learned first by children (Scarantino and Griffiths, 2011). The concept of basic emotions is not unique to Rosch; however, the first systematic scheme for basic emotions was developed by the early Stoics and described by Diogenes Laertius, Pseudo-Andronicus, Stobaeus, and Cicero. This scheme postulated four generic passions – pleasure, distress, desire, and fear – each of which subsumed numerous specific passions (Parrott, 2010). Thomas Aquinas considered the following passions to be basic: love, hatred, desire, aversion, hope, fear, despair, courage, joy, sorrow, and anger. René Descartes postulated six primary passions: love, hatred, joy, sadness, wonder, and desire. Thomas Hobbes listed seven simple passions: appetite, desire, love, aversion, contempt, joy, and grief. Baruch Spinoza postulated three principal passions: desire, delight, and displeasure (Parrott, 2010).

In their seminal study of emotion from the prototype perspective, Fehr and Russell (1984) postulated that it is possible to create a hierarchy of emotion using basic emotions such as anger, fear, love, happiness, sadness, and the like. Besides these prototypical members, there would be less prototypical emotions such as pride, envy, courage, and lust. Fehr and Russell conducted seven sequential case studies to determine if emotions could be organised via prototypes; they found that the following basic categories were ranked most highly by the study participants: love, hate, anger, sadness, happiness, and fear.

Scientists have not found any single measurement, or profile of measurements, to indicate when a person is in a state of anger or fear or sadness, and so on (Barrett, 2006, 2013). Barrett argued that the inability to configure categories of emotions into clear boundaries is not a flaw, but a reflection of the nature of emotional responses. People parse the world into things emotional and non-emotional, and they further divide the emotional world into discrete categories. In western culture, these categories correspond to anger, sadness, fear, disgust, and happiness.

Shaver *et al.* (1987) suggested that “ordinary people know a great deal about emotion. When given posed or natural photographs of common emotional expressions, people around the world can reliably name the emotion being expressed. People from a variety of cultures agree on which emotion generally follows a particular set of abstract antecedents, such as insult, loss, and danger” (p. 1061). These authors conducted two studies to examine basic emotions. The first study had 112 psychology students rate the prototypicality of 213 emotion names into a range of 1-4; in the second study, a different

set of psychology students took the same list of emotion names and sorted them into categories. The result of this second sorting exercise produced basic emotions that paralleled those proposed by Fehr and Russell above, and suggested that “the emotion lexicon can be reasonably portrayed as a hierarchy with a basic level, and both typical and actual emotion episodes can be meaningfully characterized in terms of basic-emotion prototypes” (p. 1084).

Storm and Storm (1987) developed a taxonomy of English emotion terms. In total, 72 terms were selected from lists in the literature to include the entire range of terms considered part of the emotion domain. Subjects were instructed to sort the 72 terms, printed individually on cards, into non-overlapping groups according to similarity of meaning. The final groups consisted of anger, hatred, sadness, despair, bewilderment, embarrassment, apathy, fear, nervousness, contentment, love, admiration, desire, alertness, confidence, happiness, joy, and awe.

Baldoni *et al.* (2012) discussed the growing importance of emotion-oriented computing, or affective computing, in social websites. Affective computing automatically recognises users’ emotions by analysing their tagging or writing behaviour. These authors created OntoEmotion, an ontology by which documents in the Semantic Web could be categorised. The corpus of tags used for the ontology was derived from the Italian social arts portal ArsMeteo (www.arsmeteo.org). OntoEmotion uses the basic emotions sadness, happiness, surprise, fear, and anger, each of which is divided further into levels of more specific emotions, such as hate or displeasure, for a total of 87 types of emotions.

Cowie and Cornelius (2003) collected samples of speech from the database of emotional speech compiled by the Leeds-Reading and Belfast university projects. Three independent raters assigned verbal labels to the clips from the database. Each rater was required to choose the one label from a list of 16 that best described the main emotion in the clip, and was free to choose up to two additional labels if the first was not felt to be sufficient. For each label, the strength of the emotion concerned was also rated strong, medium, or weak. The 16 labels were:

- (1) neutral;
- (2) angry;
- (3) sad;
- (4) worried;
- (5) disappointed;
- (6) afraid amused;
- (7) pleased;
- (8) happy;
- (9) excited;
- (10) confident;
- (11) interested;
- (12) affectionate;
- (13) loving;
- (14) content;
- (15) relaxed; and
- (16) bored.

The difficulty of providing an adequate representation of emotions in the areas of affective computing is discussed by Francisco *et al.* (2007). A significant problem pertains to the large number of emotional categories, whose differences and similarities are not clear-cut. The authors used EmoTag, a tool for automated mark-up of texts with emotional labels, to assign tags to digitised documents. A corpus of example texts previously annotated by human evaluators was mined for an initial assignment of emotional features to words. The result was a List of Emotional Words, which become a useful resource for later automated mark-up. The created ontology consisted of the following basic emotions: anger, sadness, annoyance, fury, and indignation.

Thomson and Crocker (2013) developed a structured lexicon for feelings that could be used as the basis for developing commercial questionnaires for multi-country consumer research. The authors created a single prototypical model for classifying feelings, based on the words typically used by consumers in English, French, German, and Italian, and for extracting appropriate lexicons based on the structure and content of the classification scheme thus obtained. A classification was derived based on at least 500 feelings per language. In total, 12 basic emotions were derived: caring, excited, sociable, self-confident, angry, judgemental, inadequate, surprised, detached, and sad.

The studies above provide a wealth of information about how to categorise emotions. They suggest not only common basic emotions, but also provide specific types of emotions within these basic emotions. An analysis of the taxonomies found in these studies suggests that the most frequently occurring basic emotions are anger, disgust, fear, happiness, love, sadness, and surprise.

Associations: contextual literature

The most relevant literature pertaining to associations (or memories) for the purpose of this paper lie in the field of cognitive psychology. Tulving (1972) and Manier and Hirst (2008) suggested three types of long-term memories:

- (1) Procedural memory is responsible for knowing how to do things, and is unconscious, e.g., knowledge of how to drive a car.
- (2) Semantic memory is responsible for storing information about the world, e.g., the meaning of words. Semantic memory involves conscious thought.
- (3) Episodic memory is responsible for storing information about events (i.e. episodes) that we have experienced in our lives. Episodic memory involves conscious thought.

Mastin (2010), Baddeley (2004), and Squire (1992) divided human memory into the following types:

- Sensory memory: the ability to retain impressions of sensory information after the original stimuli have ended, e.g., remembering what something looks like after seeing it for only a second.
- Short-term memory: the temporary recall of information that is processed at any point, e.g., remembering the content of the last two paragraphs written before this sentence.
- Long-term memory: the storage of information over a long period, e.g., the memories of a childhood home or friends.

Long-term memory is divided into explicit (or declarative) and implicit (or non-declarative) memories. Explicit memories involve episodic and semantic memories, which are, respectively, memories of experiences and specific events in time (e.g. the birth of a child), and of facts that we have learned (e.g. multiplication tables). Implicit memories deal with one's abilities or skills, based on rituals and practices, such as the ability to drive a car.

For the purposes of this paper, explicit memories, in the form of episodic and semantic memories, appear to be the most appropriate categories that relate to the findings in the user reviews obtained by Spiteri and Pecoskie (2016), who noted that readers would refer, for example, to specific events, films, television shows, and so forth that they associated or recalled with the book title at hand.

Creating taxonomies by which to classify emotions, tones, and associations

Each created taxonomy consists of a set of basic categories populated with individual types of emotions, tones, and associations, derived from our content analysis of the user reviews of the 22 fiction titles, as discussed earlier (Pecoskie *et al.*, 2014; Spiteri and Pecoskie, 2016). More specifically, 536 reviews were extracted from the base sample of 831 records from January to March 2013. Grounded theory was used to code the content of the reviews into three pre-determined categories, emotions, tones, and associations (Strauss and Corbin, 1998; Hollan *et al.*, 2000; Hsieh and Shannon, 2005; Walker and Myrick, 2006). More details follow below.

Emotions

The taxonomy designed herein for emotions was based on extant taxonomies for basic emotions in the areas of cognitive and social psychology, as discussed in the literature review. A number of scholars in these two disciplines have created detailed taxonomies for emotion; in most cases, these taxonomies contain lists of basic emotions, which are, in turn, divided into sets of individual emotions. The following approach was used to build our taxonomy of basic emotions.

A thorough examination of existing emotion taxonomies was conducted to examine and extract the most frequently occurring basic emotions (Baldoni *et al.*, 2012; Cowie and Corneliuss, 2003; Fehr and Russell, 1984; Francisco *et al.*, 2012; Parrott, 2010; Shaver *et al.*, 1987; Storm and Storm, 1987; Thomson and Crocker, 2013). Table I shows the compilation of the basic emotions that occurred most frequently amongst these various taxonomies.

The compiled table, based on extant taxonomies, consists of seven basic emotions: anger, disgust, fear, happiness, love, sadness, and surprise. In order to populate these seven categories with specific types of related emotions, all the terms that had been coded as “tones” in the analysis of the bibliographic records for the 22 fiction titles (Pecoskie *et al.*, 2014; Spiteri and Pecoskie, 2016) were extracted. WordNet (Princeton University, 2017), the lexical database, was used to match these coded terms to the seven basic emotions. In WordNet, for example, “joy” is listed as a synonym for “love”, thus it was listed as a related emotion in the Love basic category.

An eighth category, “engagement”, was created, to correspond to the code “readability”. Those codes that could not fit logically into the eight basic categories were placed into a ninth category, labelled “uncategorized”. Table II represents the final taxonomy of basic emotions and corresponding-related emotions.

Tones

As noted in the literature review, the concept of tones appears frequently in RA studies pertaining to appeal. What became evident, however, is that the literature did not delve deeply into dividing tones into categories or types; in some cases, examples of types of tones were provided (e.g. exciting), but not in any systematic manner that would be of help to the design of our taxonomy for tones. All the terms that had been coded as “tones” in the analysis of the bibliographic records for the 22 fiction titles (Pecoskie *et al.*, 2014; Spiteri and Pecoskie, 2016) were extracted and examined in WordNet (Princeton University, 2017), with

Basic emotion	Related emotions	Sources
Anger	Agitation, aggravation, aggression, anger, annoyance, arrogance, displeasure, enragement, envy, exasperation, ferocity, frustration, fury, grouchiness, grumpiness, hate, hostility, indignation, infuriation, ire, irritation, outrage, rage, rancour, resentment, revulsion, sulking, wrath	Baldoni <i>et al.</i> (2012), Cowie and Cornelius (2003), Fehr and Russell (1984), Francisco <i>et al.</i> (2012), Parrott (2010), Shaver <i>et al.</i> (1987), Storm and Storm (1987), Thomson and Crocker (2013)
Disgust	Abhorrence, aversion, boredom, contempt, detestation, disgust, dislike, distaste, loathing, nausea, repugnance, repulsion, revolt, unhappiness	Fehr and Russell (1984), Parrott (2010), Storm and Storm (1987)
Fear	Alarm, anguish, anxiety, apprehension, consternation, courage, diffidence, discomfort, distress, dread, fear, fright, horror, hysteria, mortification, nervousness, panic, paranoia, phobia, shock, strain, submission, tenseness, tension, terror, trepidation, uneasiness, wariness, worry	Baldoni <i>et al.</i> (2012), Cowie and Cornelius (2003), Fehr and Russell (1984), Francisco <i>et al.</i> (2012), Parrott (2010), Shaver <i>et al.</i> (1987), Storm and Storm (1987), Thomson and Crocker (2013)
Happiness	Amusement, bliss, cheerfulness, contentment, delight, eagerness, ecstasy, elation, enchantment, enjoyment, enthusiasm, euphoria, exaltation, excitement, exhilaration, fascination, fun, gaiety, gladness, glee, gloating, gratification, happiness, hope, humour, jolliness, joviality, joy, jubilation, laughter, merriment, optimism, playfulness, pleasure, pride, rapture, relief, satisfaction, serenity, solidarity, sympathy, thrill, triumph, zeal, zest	Baldoni <i>et al.</i> (2012), Cowie and Cornelius (2003), Fehr and Russell (1984), Francisco <i>et al.</i> (2012), Parrott (2010), Shaver <i>et al.</i> (1987), Storm and Storm (1987)
Love	admiration, adoration, affection, arousal, attraction, caring, compassion, desire, fondness, infatuation, liking, longing, love, lust, passion, sentimentality, tenderness	Cowie and Cornelius (2003), Fehr and Russell (1984), Francisco <i>et al.</i> (2012), Shaver <i>et al.</i> (1987), Storm and Storm (1987)
Sadness	Agony, alienation, anguish, apathy, boredom, chagrin, defeat, dejection, depression, desolation, despair, despondency, disappointment, discontent, discouragement, dismay, displeasure, embarrassment, gloom, glumness, grief, guilt, homesickness, hopelessness, humiliation, hurt, indecisiveness, insecurity, isolation loneliness, melancholy, misery, neglect, nostalgia, pensiveness, pity, powerlessness, regret, rejection, remorse, sadness, shame, sorrow, suffering, sympathy, unhappiness, woe	Baldoni <i>et al.</i> (2012), Cowie and Cornelius (2003), Fehr and Russell (1984), Francisco <i>et al.</i> (2012), Parrott (2010), Shaver <i>et al.</i> (1987), Storm and Storm (1987), Thomson and Crocker (2013)
Surprise	Amazement, astonishment, awe, disbelief, distraction, intrigue, surprise	Baldoni <i>et al.</i> (2012), Shaver <i>et al.</i> (1987), Thomson and Crocker (2013)

Table I.
Compilation of basic emotions and related emotions

Basic emotion	Related emotions
Anger	Anger, annoyance, displeasure, entrapment, frustration
Disgust	Disgust, dislike
Engagement	Captivation, curiosity, engagement, reflection
Fear	Confusion, difficulty, disorientation, fear, stress, uncertainty
Happiness	Anticipation, excitement, joy, pleasure
Love	Admiration, attraction, empathy, enchantment, lust, sensitivity
Sadness	Apathy, boredom, depression, disaffection, disappointment lassitude, sadness, shame, wistfulness
Surprise	Astonishment, bemusement, disbelief, surprise
Uncategorized	Caution, gratitude, patience, perseverance

Table II.
Taxonomy of emotions

the intention of finding clusters of synonyms; for example, individual terms such as “barren”, “bleak”, and “dark”, all had the same synonym “sad” in common. The idea was to find the key basic tone that had the largest number of synonyms in common with the list of individual tones. The final taxonomy (see Table III) consisted of 11 basic tones: cerebral, charming, complex, conventional, dramatic, frightening, humourous, imaginative, optimistic, realistic, and sad, which were each populated with the relevant individual tone terms (e.g. sad > barren, bleak, and dark).

Associations

The concept of memory, or associations, and the process of conceptualising its taxonomy proved to be most challenging, because the types of memories outlined in the literature review, while relevant, might not serve as very useful access points in a catalogue. While many people might understand the use of an emotion facet such as “love”, or a tone facet such as “sad”, it is probably unlikely that an association facet labelled “episodic memory” would be as recognisable or accessible.

Given the unsuitability of the very broad types of memories in the literature, a faceted approach was used in the construction of basic types of associations, based on its use in social media systems and discovery systems (Spiteri, 2010). The following faceted systems were consulted: The Classification Research Group (Broughton, 2006; Ranganathan, 1967); the Art and Architecture Thesaurus (J. Paul Getty Trust, n.d.), and Flickr (www.flickr.com). From these sources, a list of common basic associations was extracted, as shown in Table IV.

All the terms coded as “associations” in the analysis of the bibliographic records for the 22 fiction titles (Pecoskie *et al.*, 2014; Spiteri and Pecoskie, 2016) were extracted and examined in WordNet (Princeton University, 2017) to determine the most logical basic association to which they belonged. A number of the coded terms referred to specific events (e.g. named holidays), and experiences (e.g. childhood) that did not fit into the original list of five associations. Given this, the final taxonomy was expanded to include seven basic associations, as shown in Table V.

Basic tone	Related tones
Cerebral	Dignified, erudite, formal, insightful, intelligent, lofty, philosophical, profound, reflective
Charming	Beautiful, charming, elegant, enchanting, engaging, entertaining, haunting, lush, pleasurable, sensitive; sympathetic, tender, touching
Complex	Complex, controversial, fragmented, labyrinthine, nuanced, picaresque, psychological, rambling, subtle, wordy
Conventional	Bland, clichéd, comfortable, contrived, familiar, formulaic, insipid, juvenile, light, maudlin, melodramatic, one-dimensional, repetitive, stereotypical, unrealistic
Dramatic	Dramatic, emotional, exciting; fascinating, heartfelt, intriguing, moving, nostalgic, powerful, sensational, surprising, suspenseful, thrilling, zesty
Frightening	Angst-ridden, chilling, claustrophobic, cruel, daunting, disturbing, gory, graphic, gruesome, harsh, horrifying, perverse, psychopathic, scary, shocking, uncomfortable, unnerving, violent, volatile
Humourous	Dark humour, humourous, ironical, satirical
Imaginative	Adventurous, allegorical, creative, descriptive, eccentric, edgy, evocative, fantastical, imaginative, innovative, lyrical, magical, mysterious, mythical, original, stylish, surreal, unique, wistful
Optimistic	Assured, hopeful, innocent, inspirational, optimistic, resilient, respectful, triumphant, uplifting
Realistic	Abrupt, authentic, character-driven, cohesive, compelling, gritty, historical, poignant, precise, prosaic, readable, realistic, resonant
Sad	Barren, bleak, dark, depressing, desolate, devastating, grim, heavy, melancholic, painful, sad

Table III.
Taxonomy of tones

Implications and conclusion

In meeting this paper’s objectives, this paper contributes to ongoing conversation in RA research and practice and taxonomy-building and access. This paper provides an examination of how affect is treated not only through an LIS-centric RA lens, but also from a variety of disciplines. While RA generally takes a valid and understandable view of RA access points that focusses on aspects or the systems of the book itself (e.g. plot, genre, period, format, etc.), this work succeeds in expanding on the broad and common access point of “emotional experience” through a multi-disciplinary approach, which, as noted, is the only historical RA term that touches on affect. A multi-disciplinary approach enables the LIS and RA areas to gain insight into how affect is treated in other disciplines, especially as those outside topical areas have been exploring affect in depth over time. This external investigation of the literature not only provides a greater understanding of affect itself, but also provides a foundation in which affect could be contextualised and, subsequently, the taxonomies upon which affective experiences could be classified were built. Finally, grounding this exploration from a multi-disciplinary perspective provides a frame and offers a guide for those looking to craft taxonomies in other thematic areas.

As well, this paper helps to focus RA theory and practice from the readers’ own perspective. The resulting taxonomies of emotion, tone, and associations have been constructed from those user-generated reviews written by library users that provide insight into the ways in which readers engage and interact with the books they read, as expressed by those reviews. The taxonomies can be applied to the RA literature, thereby expanding the understanding of RA theory, especially that of appeal.

These taxonomies may prove fruitful for expanding the traditional, practical work of readers’ advisors as they engage with readers, embedding appeal or other terminologies in their work, not only about the characteristics of reading material, but the experience of reading and feeling itself. A cautionary note is necessary here about neutrality, RA, and affect. While neutrality is often considered a tenet of service and many general RA categories are factual or easily deemed neutral (e.g. genre, topic, etc.), this is not necessarily representative of how readers interact with their reading. Instead of being projected as neutral, these taxonomies can be seen as representative of the user perspective.

Table IV.
Derived basic associations

Basic association	Source
Agents	Art and Architecture Thesaurus; Broughton (2006), Flickr
Activities	Art and Architecture Thesaurus; Broughton (2006), Ranganathan (1967)
Periods	Art and Architecture Thesaurus; Broughton (2006), Flickr; Ranganathan (1967)
Places	Art and Architecture Thesaurus; Broughton (2006), Flickr; Ranganathan (1967)
Objects	Art and Architecture Thesaurus; Broughton (2006), Flickr; Ranganathan (1967)

Table V.
Taxonomy of associations

Basic association	Related associations
Agents	Actors, authors, children, corporations, directors, fictitious characters, generations, government, persons, reviewers
Activities	Games, travel
Events	Historical events, recent events
Experiences	Childhood, memory, motherhood
Periods	Periods
Places	Geographical locations, libraries, schools, settings
Objects	Books, movies, music, nationalities, pets, social media, songs, today’s world, television shows

The individual emotion, tone, and associations taxonomies can provide RA staff with guidance on how readers' subjectively express their reading and the experiences they wish when they read, and allow for RA work to remain user centred. RA staff, then, can employ the taxonomies to interpret the user's preferences and emotions, and with whom they are working in partnership.

These taxonomies can be applied to the practical work of bibliographic description, helping to expand access and organisation through an affective lens. Readers could apply the taxonomies of affect to narrow the scope of their searches in a catalogue; for example, they could specify that they wanted to find books that elicit sadness (emotion facet), are dramatic in tone (tone facet), and which remind them of specific events (associations facet). The taxonomies could serve as main categories under which readers are encouraged to add their tags to bibliographic records. Future research should investigate the ways in which these taxonomies have been adopted and applied, questioning the impact of affect on access and reading experience.

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