Reijo Savolainen

School of Information Sciences

University of Tampere

The role of emotions in online information seeking and sharing: a case study of consumer awareness

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Introduction

Empirical studies on online discussion forums provide a variety of findings demonstrating how such arenas are used in communication, information seeking and information sharing in diverse contexts, for example, academic research (Matzat, 2004), health (e.g., Godbold, 2012), and hobbies (Case, 2010). So far, most of these studies have focused on the cognitive factors of communication and information sharing, while the questions dealing with the affective elements of online discussion have remained marginal. However, emotional factors are equally important because they affect the general tone of discussion and influence the ways in which participants seek and share information in online forums.

The main aim of the present study is to elaborate the picture of the role of emotional expressions in online discussion. The main emphasis will be placed on ways in which positive and negative emotions are expressed in the context of information seeking and sharing. To examine this issue, the study makes use of the classic model of Interaction Process Analysis (IPA), originally developed by Bales (1950a; 1950b) for the study of problem solving within small groups communicating face-to-face. However, as the present investigation demonstrates, the use of the IPA model can be successfully extended to the study of interaction taking place in online discussion forums. The IPA model was chosen because it enables a detailed identification of acts that constitute interaction in online discussion. More specifically, the IPA model reviews such acts contributory to four functional areas:

- exhibiting positive emotional reactions
- exhibiting negative emotional reactions
- asking questions
- providing answers.

For example, agreeing with others and joking are acts that may bring about positive emotional reactions facilitating information sharing within a discussion group, while showing antagonism towards others can result in negative emotional reactions rendering information seeking more difficult. Bales (1950a, p. 9) assumed that acts contributory to task areas of asking questions, i.e., information seeking, and providing answers, i.e., information sharing are emotionally neutral. However, as the present study suggests, such acts can incorporate emotional expressions, too. Since the IPA model only identifies the modes of acts and remains silent about their content, the picture of the interaction was substantiated by elaborating the nature of emotions expressed in the context of acts contributory to the four functional areas referred to above. For this purpose, the classification of everyday emotions developed in the HUMAINE (Human-Machine Interaction Network on Emotion) Project was employed. This scheme enables a detailed identification of positive and negative emotions expressed in the context of online discussion (Cowie, 2007).

To examine the above issues, an explorative study was made by focusing on discursive interaction processes among the contributors to online discussion about consumer awareness. This topic is highly

relevant because within the last decade, social media forums providing consumer-generated content (CGC) have gained increasing popularity among Internet users (Flanagin & Metzger, 2013, pp. 1626-1627). According to Blackshaw and Nazzaro (2006, p. 4), CGC is "a mixture of fact and opinion, impression and sentiment, founded and unfounded tidbits, experiences, and even rumor". By means of social media consumers can post reviews of products, read reviews by other consumers, and exchange experiences with products, brands, or services. Such messages elicit interest among fellow consumers because CGC can communicate real experiences by real people, independent on the vested interests of service providers. The present study makes use of CGC available in *Canadian Content* (http://www.canadiancontent.net). It is Canada's largest news and politics online community discussing current events and specific topics such as consumer issues from Canada and around the world. Given the consumer issues are often emotionally laden, this subject area is highly pertinent for the present study.

The article is structured as follows. First, to give background for the empirical study, the IPA model is introduced and the nature of everyday emotions is discussed, followed by a review of studies on emotional expressions in online discussion. Then, the conceptual framework, research questions and empirical research design will be specified. The main part of the article consists of the report of the empirical findings. Finally, the main findings will be discussed and conclusions drawn about their significance.

Background

Interaction Process Analysis (IPA) model

Drawing on the ideas of functionalist social psychology, Bales (1950a; 1950b) developed the IPA model for the study of problem solving in small groups. Originally, IPA focused on problem solving discussion groups set up for research purposes in a laboratory setting; however, it can be and has been used in research on various different types of face-to-face encounters, including naturally occurring ones (Peräkylä, 2004, p. 3). With years, IPA has become one of the classic models of social psychology. According to Keyton (2003, p. 260), IPA has been recognized as "a sound method for identifying the communicative functions of group problem-solving and decision-making interaction". The purpose of the IPA system is to identify and record the nature (not the content) of each separate act in ongoing group interaction. The individual acts are constitutive of diverse functions (or functional areas) of interaction. The model identifies twelve acts that constitute interaction processes in four functional areas of problem solving (see Table I).

Functional area of the act that constitutes interaction	Interaction process category
Socio-emotional area: positive reactions	1. Shows solidarity, raises other's status, gives help, reward positive reactions 2. Shows tension release, jokes, laughs, shows satisfaction 3. Agrees, shows passive acceptance, understands, concurs, complies
Task area: providing answers	4. Gives suggestion, direction, implying autonomy for other 5. Gives opinion, evaluation, analysis, expresses feeling, wish 6. Gives orientation, information, repeats, clarifies, confirms
Task area: asking questions	7. Asks for orientation, information, repetition, confirmation 8. Asks for opinion, evaluation, analysis, expression of feeling 9. Asks for suggestions, direction, possible ways of action
Socio-emotional area: negative reactions	10. Disagrees, shows passive rejection, formality, withholds help 11. Shows tension, asks for help, withdraws out of field 12. Shows antagonism, deflates other's status, defends or asserts self

Source: Modified from Bales (1950b, p. 258)

Table I. The category system of Interaction Process Analysis.

As depicted in Table I, each of the four functional areas is constituted by three acts of diverse kinds. For example, the socio-emotional area of positive reactions incorporates the acts of showing solidarity, showing tension release" and agreeing with others, while one of the acts contributory to the task area of asking questions is "asks for orientation and information". In IPA, the researcher's task is to find out how frequently acts belonging to each category occur in the encounter that is being examined. By examining how frequently acts fitting different categories take place during different phases of the encounter, in different positions in relation to each other, and how the acts belonging to different categories are distributed among the participants, the researcher aims to describe the distinct character of the group and the nature of interaction characteristic of it (Peräkylä 2004, p. 2).

Importantly, the application of the IPA model is not confined to the study of face-to-face interaction. In fact, the use of the model has been successfully extended to the investigation discursive interaction occurring in online contexts. Rice and Love (1987) employed the IPA categories in an analysis of messages posted to a computer-mediated communication (CMC) forum. Sauer and associates (2000) examined knowledge acquisition in an ecological product design by making use of the IPA model. Fahy (2005) used the IPA model to compare interaction in face-to-face and CMC groups among graduate students and the course instructor. The study showed, for example, that showing solidarity was relatively common, while the expressions of tension release were rare in both groups. More recently, Savolainen (2011) used the IPA model in a study focusing on the information needs and information sharing within the groups of bloggers and blog readers discussing the issues of slimming. The acts contributory to positive socio-emotional reactions were more frequent among the blog readers than bloggers. On the other hand, the blog contributors seldom exhibited negative emotional reactions, and there were relatively few examples showing disagreement.

The nature of emotions

So far, researchers have reached no consensus about the nature of the affective phenomena such as emotion, feeling and mood (Mulligan and Scherer, 2012). The present study concentrates on *emotion* that can be regarded as a major affective factor. Currently, there are two major perspectives on the study of emotions. *Discrete emotion* theorists suggest the existence of basic emotions which are universally recognised (Ekman, 1992). For example, Izard and associates (1993) identified three positive emotions: interest, joy, and surprise, and nine negative emotions: anger, contempt, disgust, fear, guilt, inward hostility, sadness, shame, and shyness. Robinson (2008) differentiated among 11 pairs of positive and negative emotions. The former include, for instance, gratitude, hope, and sympathy, while the latter involve emotions such as anger, disgust, and fear. The proponents of *appraisal theories* provide an alternative perspective by suggesting that emotions result from the evaluation (i.e., appraisal) of events occurring in the everyday environment (Ellsworth and Scherer, 2003). The main idea is that as soon as the initial appraisal is made about an event, for example, fire alarm in a hotel, the organism is in a sense 'emotional' in comparison to its previous state, even if not experiencing any of the full-fledged basic emotions described by discrete emotion theorists. Accordingly, the nature of the emotionality is fluid and constantly changing as appraisals are added and revised (Ellsworth and Scherer 2003, p. 575).

The complexity of emotional phenomena is exemplified by the large-scale survey on the frequency of emotions experienced in everyday life contexts by French- and German-speaking people in Switzerland (Scherer *et al.*, 2004). No less than 38 individual emotions were identified. About 57% of the emotions had a negative valence, 36% positive valence and 7% were rather neutral (Wilhelm *et al.*, 2004, p. 650). The five most frequently mentioned emotions were happiness, anger, anxiety, joy, and sadness. In contrast, emotions such as disgust, hope, shame, and contempt were seldom experienced (Scherer *et al.*, 2004, pp. 516-517). All in all, the findings suggest that people are more aware of negative emotions, and that these are more differentiated than positive emotions (Ben-Ze´ev and Revhon, 2004, p. 583).

The issues related to the classification of everyday emotions were further examined in the HUMAINE (Human-Machine Interaction Network on Emotion) Project. The researchers developed a classification of 48 major emotions that were then aggregated into smaller sets (Cowie, 2007). The category of positive and lively emotions include, for example, amusement, excitement and pleasure, while calm and relieved belong to the group of quiet and positive emotions. Further, emotions related to caring include empathy and love, while positive thoughts entail hope and pride. Examples of negative and forceful emotions include anger, contempt and disgust, while anxiety, fear and worry are classified as negative emotions that are not in control. Despair and sadness exemplify passive negative emotions, while doubt and frustration are classified as negative thoughts. Further, shock and tension are negative emotions related to agitation. Finally, the classification identifies "reactive" emotions such as interest and surprise (Cowie, 2007, p. 24). As discussed below, an abridged version of the above classification will be used in the identification of emotional expressions reviewed in the present study.

Emotional expressions in computer-mediated communication

CMC includes a variety of electronic message systems and electronic conference systems, which can be supplemented by audio and video links. CMC applications can be synchronous (e.g., chat) or asynchronous (e.g., email), and the messages are predominantly typewritten (Derks *et al.*, 2008, p. 767). Online communities emerge by using CMC applications. Examples of online communities include blogs, discussion boards, and social networking sites such as Facebook, Twitter and YouTube. Online communities consist of large, geographically dispersed groups of individuals who may or may not know each other, but share a common interest. Through a shared communication

medium, online communities facilitate the formation of relationships between and among community members and the subsequent creation and exchange of knowledge, ideas, and interpretations (Johnston *et al*., 2013, p. 214). As online communities focus on a variety of topics such as consumer issues and health, they can be effective in increasing the overall well-being of participants by providing informational and emotional support, for example.

People seeking answers to everyday problems often find electronic support groups useful because they function as 'empathic communities' (Preece, 1999). Empathy refers to members' ability to accurately infer other members' point of view and feelings and further benevolently act in response to other members' distressful situation (Feng *et al*., 2003). In such communities, people not only seek information, but also make contact with others facing similar problems, tell their stories, and be heard. By sharing practical advice with one another, users may gain the wisdom that experience brings (Loader *et al*., 2002, p. 53). Because other participants share their interests, online communities are likely to be congenial information environments, where information in which they are interested is likely to be found, even if they do not have explicit queries (Burnett, 2000).

The nature of informational and emotional support provided by online communities has been examined in the context of health in particular. Health-related online forums can be generally described as online settings in which people who are in a similar life situation exchange factual information and emotional support to help each other. For example, Eichhorn (2008) found that of the messages posted to eating disorder support groups, about 30% provided informational support, and 28% emotional support. More recently, Zhao and associates (2013) examined how people make use of patient online communities (POC) to seek useful health information and empathetic support. Results indicated that trust and social identity within POC positively influenced the development of empathy. Empathy in turn exerted a positive influence on willingness to contribute personal knowledge and experience.

The messages posted to online forums can include facts and emotional judgements implying positive or negative preferences related to the issue at hand. Research has established that the expressions of negative rather than positive emotions tend to be more commonplace in anonymous CMC settings compared to face-to-face settings (Derks *et al*., 2008, pp. 774-775). Emotional reactions may be triggered particularly when the participant faces opinions and preferences different from her own views. In this case, explicit communication may involve references to discrete emotions through verbal emotion labels (e.g., 'I´m angry about this'), appraisals (e.g., 'this is scary'), and sometimes even expressions of action tendencies (e.g., 'I'd like to hit you'). (Derks *et al*., 2008, p. 768). Verbal emotional descriptions can be strengthened by using textual conventions such as emoticons. Among the most familiar of these is :) to indicate pleasure and :-(to express sadness (Purver and Battersby, 2012, p. 483). According to conventions of expressing written emotions in CMC, they can also be indicated by using bold capital letters and exclamation marks, for example (Carey, 1980). Kim and Gupta (2012, p. 986) provide consumer-related examples of the use of lexical means and emoticons:

- "I bought this laptop in 2004. Speed is good enough for Internet surfing and regular college work at the same time. **I'M PLAIN DELIGHTED!!**"😀😀😀
- "Speed is not good enough for Internet surfing and regular college work at the same time. **I'M PLAIN MAD‼**"😡😡😡

Chmiel and colleagues (2011) examined the expression of emotions in BBC discussion forums focusing on topics such as 'Religion and Ethics'. The findings indicate that the emotion a participant expresses depends on the emotions in previous posts. Positive emotions tended to facilitate affiliative responses, while negative emotions appeared to be more complicated in this respect. For example, anger, whether targeted at other participants directly or at the topic of the discussion, might elicit anger, while sadness, in contrast, might elicit empathic responses that also express sadness. Finally, Laflen and Fiorenza (2012) identified linguistic features that writers used to communicate emotion in

CMC. The analysis focused on a course of study titled 'Presidential Election Rhetoric'. It appeared that the writers used evaluation devices in CMC quite differently than they did in face-to-face conversation. CMC was characterised by the frequent use of critical evaluations: no fewer than 62% of the comments presented online were negative.

Conceptual framework and research questions

The present study draws on two major frameworks discussed above. First, the study makes use of the IPA model. Second, the classification of everyday emotions developed in the HUMAINE project will be used (Cowie, 2007, p. 24). However, many of the emotions listed in the classification were excluded because they could not be identified reliably from the empirical data. These emotions include, for example, "boredom", "interest", and "serene". On the other hand, the above classification only does not provide definitions of individual emotions. To solve this problem, the main features of individual emotions were briefly characterized by drawing on the definitions presented by Izard et al. (1993) and Robinson (2008). In cases in which no characterizations were available in psychological studies, dictionary definitions were used. Further, to illustrate the definitions, examples taken from the empirical data of the present study are presented. Drawing on the above classification, the present study reviews six positive and twelve negative emotions characterized below.

Positive emotions
- *Amusement*. A state of being entertained, giving rise to smile or laughter. For example, "Canuck, that was priceless! A good laugh in the morning is every bit as important as a good breakfast!"
- *Empathy*. The experience of understanding another person's condition from his or her perspective. For example, "Hats off to them if they are willing to work and do what it takes when the chips are down".
- *Hope*. Expectation of a positive outcome: a feeling that what is wanted can be had or that events will turn out for the best. For example, "I hope you enjoy your time here at CC.net, and I hope to have engaging discussions with you in the future ☺"
- *Pleasure*. Enjoyment derived from something that is to one's liking For example, "Great thread. I'm really glad I found it!"
- *Relieved*. A feeling of success when failure is expected or confirmation that an aversive event will not occur. For example, "I love you all for giving me this warning, you saved me Australian $202."
- *Satisfaction*. The state of feeling pleased because of something that a person did or something that happened to oneself. For example, "I find the old guy working as an electrician, plumber, depending on the dept. I've gotten tons of great advice and know how."

Negative emotions
- *Anger*. A strong feeling of psychological pain caused by thoughts about real or imagined harm done by another. For example, "He even tried saying that it was "stat barred" and still they sent him ANOTHER @#&@#@#@# letter 👿"
- *Anxiety*. A state of uneasiness and apprehension about future uncertainties which an individual is ready or prepared to attempt to cope with. For example" I'm waiting for them to call me back because I can't wait to see the particulars, but this is awful."
- *Contempt*. A feeling of regarding someone or something as inferior or worthless. For example, "X is a DISHONEST, MISLEADING, LYING jerk".
- *Disappointment*. Feeling displeased because something was not as good as expected or because something one hoped for or expected did not happen. For example, "I saw the title and I thought the topic was going to be about the Easter goodies. Imagine my disappointment

😕"

- *Disgust.* A strong feeling of dislike for something or somebody that has very unpleasant features or qualities. For example, "I was no fan of X before this, but this is so far beyond the pale, outrageous!"
- *Doubt.* A feeling that one does not know the truth, truthfulness, or trustworthiness of someone or something. For example, "I just got my letter today and it said the same blah blah blah, you're special. This letter is personal and JUST FOR YOU"
- *Fear.* A strong distressing feeling aroused by impending danger, whether the threat is real or imagined. For example, "Now it appears that the increasingly prevalent nightmare of a disease called "Morgellon's Disease" may be a result of X crops and food."
- *Frustration.* A feeling of annoyance caused by being unable to do something or to stop a negative process from moving forward. For example, "I am so tired of this, you feel like you've done something wrong when you know you haven't and they can really push their buttons by their comments."
- *Guilt.* A feeling that occurs when a person believes that she has violated a moral standard that she herself believes. For example, "Sorry for the apparent advertising."
- *Irritation*. A feeling of being stimulated by an event or idea of an uncomfortable kind. For example, "Alas, this forum has some huge trolls that don´t want to do anything but troll. Sigh!"
- *Surprise* (in a negative sense). A feeling of being amazed or astonished by something unanticipated. For example, "She only has v-mail ???? No email, it's 2008."
- *Worry.* An uneasy state of mind usually over the possibility of an anticipated misfortune causing trouble for oneself or for other people. For example, "I believe that aspartame can aggravate diabetes and its complications, especially eye problems and neuropathy".

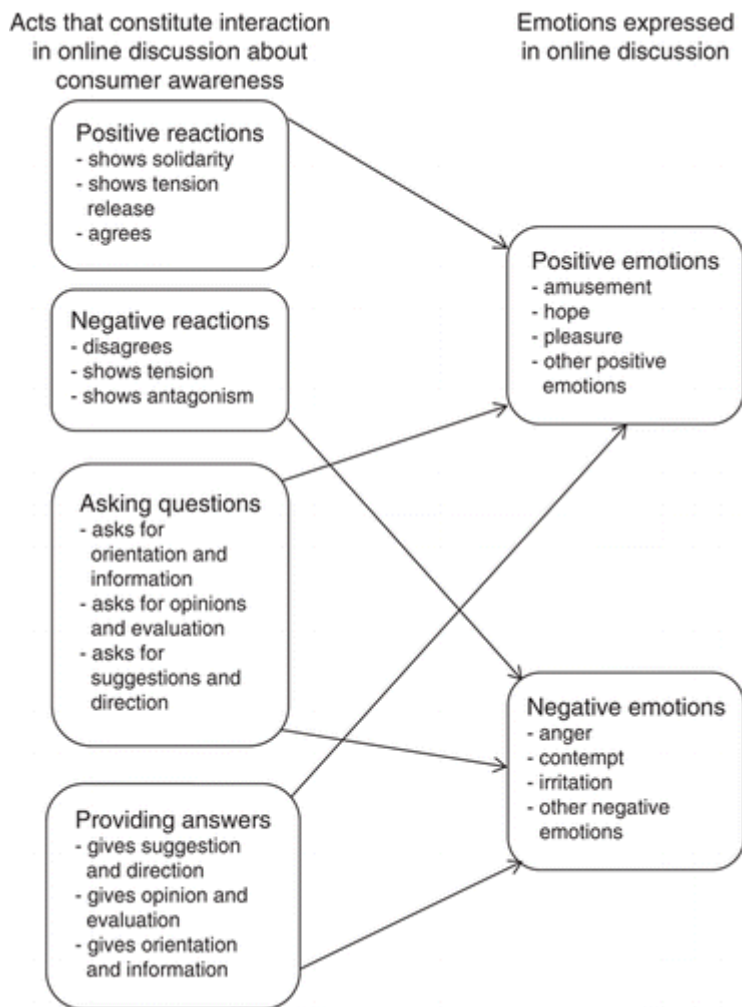The conceptual framework of the present study is depicted in Figure 1.

Figure 1. The conceptual framework of the study.

Drawing on the IPA model, Figure 1 identifies twelve acts that constitute interaction in online discussion about consumer awareness. Different from the ideas of Bales (1950a), however, the functional areas of positive and negative reactions, and asking questions and providing answers are not primarily approached from the perspective of problem solving. This is because discussion taking place in open online communities is not always focused on the systematic solution of problems faced by the participants. The contributors may also communicate opinions that are only loosely related to the problems discussed in prior messages. Therefore, in the context of the present study, it is more reasonable to refer more generally to discussion about consumer awareness than the solving of consumer-related problems.

Most importantly, Figure 1 suggests that the acts constituting interaction can incorporate expressions of positive and/or negative emotions. It is apparent that positively oriented acts such as showing solidarity release are associated with positive emotions, for example, amusement and pleasure, while negatively oriented processes like disagreeing give rise to negative emotions such as anger and irritation. The connections between the IPA categories and positive or negative emotions are less evident in the task areas of asking questions, i.e. information seeking and providing answers, i.e., information sharing. Both positive and negative emotions can be associated to acts such as asking for opinions, and giving information, for example.

Drawing on the above framework, the present study addresses the following research questions.

- RQ1. What kind of emotions are expressed in the four functional areas of the IPA model when discussing online about consumer awareness?

- RQ2. What is the role of positive and negative emotions in information seeking and sharing about the above topic?

RQ1 focuses on the variation of positive and negative emotions across the functional areas of interaction identified by the IPA model. RQ2 probes into the significance of emotions in the context of asking questions and providing answers. As the present study focuses on the issues of information seeking and sharing, the main attention will be devoted to the latter research question. To strengthen the focus of the study, a few limitations appeared to be necessary. First, the study focuses on the textual material available in the messages. Thus, no attempt will be made to review the role of additional material such as photos attached to the messages, or video clips accessible by clicking on the hyperlinks embedded in the body of messages. Second, no attempt will be made to explore how the contributors evaluated the credibility or usefulness of information available in the messages with regard to their purchase decisions, for example. Answering questions such as these would have taken an article of its own.

Empirical data and analysis

The empirical data were gathered in November 2013 from *Canadian Content* - a major online discussion platform (http://www.canadiancontent.net). It provides a number of discussion areas ranging from societal issues and politics to health and hobbies. The present study focuses on the topic of consumer awareness (http://forums.canadiancontent.net/consumer-awareness). At the time of data gathering, about 370 discussion threads focused on this issue.

The preliminary reading of discussion threads disclosed a considerable variation with regard to the content and length of individual messages. Some discussion threads had been started so recently that the number of messages was still very low and there was no interaction between the participants. To obtain relevant material for study, it was decided that the threads to be taken into the empirical analysis should contain at least 10 messages and that at least three messages should indicate interaction between the participants. Following Gobo (2006, p. 414), purposive sampling was employed because the goal of the study is to make inferences about the nature of emotional expressions in the context of interaction processes, instead of the variance of the individuals who contribute to such processes.

By the above criteria, 30 newest discussion threads with 10+ messages were identified. This sample appeared to be large enough for the drawing of a good qualitative and indicative quantitative picture of the nature of interaction in the online discussion about consumer awareness. As to the qualitative analysis, the number of messages appeared to be sufficient because the data became saturated. It became evident that the analysis of additional discussion threads would not have essentially changed the qualitative picture. As to the quantitative study, the data were sufficient for the needs of descriptive statistics, that is, the determination of percentage distribution of the IPA categories and diverse emotions expressed in online discussion.

The messages analyzed in the present study had been posted to the forum within the period of 30 January 2003 – 13 November 2013. The period of time covered by the discussion threads varied from one day (27 November 2008) to seven years and 14 days (30 January 2003 - 13 February 2010). The 30 discussion threads contained altogether 1630 messages, that is, on average 54 messages per thread. The number of messages per thread ranged from 10 to 400. Altogether 373 individual participants had contributed to the threads, yielding an average 4 messages per participant. However, there were a few super active contributors; the highest number of messages written by an individual participant was 140. On the other hand, 40.4% of the contributors wrote only one message and 20.4% two messages. Thus, there were a handful of frequent contributors, but most participants wrote only 1-2 messages.

The messages were first transferred from the discussion threads to a separate file by using the cut & paste technique. The downloaded threads were then read several times in order to get an overview. Thereafter, the threads were coded in three phases by the present author by making use of the categories of the IPA model and the classification of emotions developed by the HUMAINE project. The IPA categories were coded first. While using the IPA category system, the first issue is to define the unit of coding. Bales (1950b, p. 259) referred to the coding of spoken utterances, often single sentences describing an individual act that constitutes interaction. In the present study, following Fahy (2005), the unit of coding was defined more broadly because often, while describing an individual act, multiple sentences (or even a whole paragraph) were relevant. Thus, the procedure of coding sentence by sentence was not always necessary.

The critics of the IPA model have argued that the mutually exclusive IPA categories tend to simplify the coding process because single codes do not necessarily provide valid descriptions about subtle and complex statements of interaction (Gersick, 2003). Being aware of this problem, however, no attempts were made to use multiple codes to capture the nuances of complex statements for two major reasons. First, the data originating from CMC provides less opportunities to interpret paralinguistic features of discursive interaction, for example, to determine reliably whether an expression of disagreement (IPA category 10) should also be seen as an indication of antagonism (IPA category 12). Therefore, the coding was intentionally simplified by concentrating on the main content of a message and ignoring the subtle meanings possibly incorporated in it. Second, due to a relatively high number of messages, there was a need to keep the coding sufficiently simple. Thus, a message was coded only once for every IPA category once it was identified for the first time in the message; multiple instances were simply ignored.

In order to enhance the consistency of the IPA coding, the coded material was read several times by the present author. Careful reading of the material was particularly significant since multiple coders were not available. As a result, the initial coding was refined until there were no anomalies. In the refining of the coding, the main difficulty concerned the relationship between the concepts of "information" and opinion", as well as "opinion" and "suggestion" constitutive of IPA categories 4-9. For example, category 4 stands for "giving suggestion", while Category 5 deals with "giving opinion" and Category 6 "giving information. The problem was solved by drawing on the definitions provided by Wilson (1981, p. 3; p. 5). Accordingly, "information" is concerned only when a participant focuses on reporting factual (not necessarily true) or potentially verifiable (testable) observations or experiences such as "the book costed me $179". In turn, "opinion" was referred to as a set of attitudes, beliefs and value-based judgments, for example, "In my view, the book is overpriced". Finally, the concept of "suggestion" - distinct from opinion - was confined to dealing with requests or provision of guidance in the problem-solving process (for example, "to save your money, borrow the book from library"). No ambiguities were faced in the coding of other IPA categories.

The second phase of the coding focused on the emotional expressions appearing in the context of IPA categories identified before. In this phase, the codes included, for example, "IPA-2/Amusement" indicating that a message showing tension release is accompanied by the expression of amusement. One of the main difficulties faced in coding affective factors is that emotion terms such as pleasure and anger are discrete, but emotional states often form a continuum. Furthermore, emotions may appear as emergent, suppressed, or simultaneous combinations of fewer emotions (Douglas-Cowie *et al*., 2007, p. 494). Finally, there is always the problem of subjectivity in the interpretation of closely-related emotions in particular; one may classify a message as an indication of amusement, and the other might classify the same message as pleasure. However, due to the exploratory nature of the present study, the requirements of taking into account the closely related, continuous or mixed nature of emotions had to be compromised. Thus, the coding was simplified by describing emotions as discrete entities by making use of the definitions presented above. The coding of emotional expressions focused on the sentences assigned with IPA codes. First, to get an overview

of the emotional expressions, the sentences with IPA codes were read several times. The coding process was started by identifying the major emotion expressed in individual sentences. Similar to IPA coding, multiple codes for emotions were not used in order to keep the procedure sufficiently simple. For clarity, only explicit emotional expressions were assigned with codes. IPA-coded sentences containing implicit or no emotional expressions were labeled as non-emotional.

In most cases, expressions of strong emotions such as pleasure and anger could be identified without problems by interpreting the textual content of the messages. In some cases, the interpretation was facilitated by the fact that the messages provided explicit references to emotion words, for example, "I´m feeling angry about this". In addition, the identification of explicit emotional expressions was facilitated by the emoticons such as 😃 or 😡 attached to the emotional expressions. However, there were a few boundary cases dealing with milder emotions. For example, it was not always evident whether an emotional expression should be coded into the category of "frustration" or "irritation". In these cases, the coding decision was made by making use of the cues of the discursive context in which an emotion was expressed. The illustrative examples provided in the next section will shed further light on the coding decisions.

In order to strengthen the validity of the coding, a third phase was conducted. The initial coding of IPA and emotion categories was checked iteratively by the present author. Because the study is exploratory and does not aim at statistically representative generalizations of online discussion groups, the requirement of the consensus on coding decisions based on inter-rater reliability can be compromised without endangering the reliability of the exploratory study. According to Miles and Huberman (1994, p. 65), check-coding the same data is useful for the lone researcher, provided that code-recode consistencies are at least 90%. Following this idea, check-coding was repeated in the third phase, and the initial coding was carefully refined until there were no anomalies.

The data were analyzed by means of descriptive statistics. First, the percentage distribution of six positive and twelve negative emotions was computed. Second, individual emotion categories were cross-tabulated with the IPA categories grouped into four functional areas, that is, exhibiting positive reactions, exhibiting negative reactions, asking questions, and providing answers. Secondly, the quantitative analysis was complemented by drawing on the constant comparative approach (Lincoln and Guba, 1985, pp. 339-344). More specifically, the qualitative analysis was based on comparison of the similarities and differences of emotional expressions in the contexts of twelve IPA categories. The qualitative findings are illustrated by providing quotations taken from the messages. To see the forest for the trees, the findings concerning IPA categories 4-6 (providing answers) and IPA categories 7-9 (asking questions) will be discussed in terms of information sharing and information seeking, although "information", opinion" and "suggestion" were coded as separate categories.

Although Canadian Content is a public platform freely available to all and the contributors are expected to be aware of the fact that anyone can read their messages, the anonymity of the participants is carefully protected so that no references are made to their nicknames while presenting illustrative extracts from the messages. Instead, the participants are referred to by using technical codes such as P-58, T-27 (denoting Participant 58, Thread 27). The nicknames of the 275 participants were ordered in an alphabetical list so that P-1 denotes the first person in this list. Since Canadian Content provides a high number of discussion threads, it is unlikely that an individual participant could be identified in the illustrating extracts used in the next section. Since the extracts sometimes contain harsh criticism towards individual business enterprises, their anonymity is protected as well by using a technical code, for example, X, to denote the name of a department store.

Findings

The participants discussed a variety of topics related to consumer awareness, ranging from health risks associated with products to the quality of restaurant services. Table II specifies the main topics of the discussion threads.

Main topic	Number of threads focussing on the topic
Consumer rip offs	8
Products with health risks	5
Consumer preferences for products and services	4
Price level of products and services	4
Quality of products and services	4
Customer complaints	3
Planning the purchase of products	2
Note: $n = 30$	

Table II. The main topics of discussion threads (n = 30).

Issues related to consumer rip offs were discussed most frequently. For example, the participants reported attempts to scam people by marketing overpriced books. Products with health risks were a popular topic, too. For example, the health effects of sweeteners containing aspartame were debated. The participants also characterized their preferences for products and services. The price level of products and services was discussed fairly often. Similarly, the participants were active in providing opinions about the quality of products and services in diverse fields such as car appliances and fast food restaurants. Customer complaints were most often focused on the poor service provided by restaurants and department stores. Finally, two threads focused on the planning of the purchase of products such as computers.

Altogether 2598 IPA codes and 615 emotion codes were assigned to an individual sentence or multiple sentences constitutive of 1630 messages examined in the study. Thus, in the research material, 23.7% of the IPA-coded sentences indicated the existence of explicit emotional expressions. The rest, that is, 1983 IPA-coded sentences out of 2598 (76.3%) were classified as emotionally neutral. As the present investigation focuses on how emotions are expressed in online discussion, emotionally neutral sentences were excluded from the study. Thus, the analysis will be focused on 615 IPA-coded emotional expressions. Table III demonstrates the frequency of the emotions expressed in the context of interaction processes.

Amusement	28.3
Contempt	16.3
Worry	13.1
Irritation	11.2
Pleasure	8.8
Surprise	4.5
Doubt	3.4
Empathy	2.4
Frustration	2.1
Disgust	2.0
Disappointment	1.8
Relieved	1.6
Anger	1.3
Anxiety	1.3
Satisfaction	0.8
Guilt	0.5
Fear	0.4
Hope	0.2
Total	100.0

Note: $n = 615$

Table III. The percentage distribution of emotional expressions (n = 615).

Of the emotional expressions, 42.1% were positive and 57.9% negative. This finding supports the conclusions drawn by Scherer and associates (2004) about the predominance of negative emotions experienced in everyday contexts. In the present study, the three most common emotions were amusement, contempt and worry. In addition, pleasure and irritation were expressed fairly often. The rest of the emotions appeared fairly seldom. All in all, the long tail of the distribution evidences the rich variety of emotions that can be expressed in computer-mediated interaction. The above picture can be specified by reviewing the emotional expressions in the context of acts that constitute discursive interaction. The findings will be presented by starting from the acts contributory to positive reactions, and ending with the review of acts dealing with the provision of answers.

Exhibiting positive emotional reactions

Table IV provides a quantitative overview of the emotional expressions in the context of positive emotional reactions.

	Acts that constitute interaction		
Emotion	Showing solidarity ($n = 53$)	Showing tension release ($n = 113$)	Agreeing ($n = 8$)
Pleasure	73.6	0.0	25.0
Empathy	9.4	1.8	12.5
Relieved	9.4	0.0	0.0
Amusement	5.7	98.2	62.5
Satisfaction	1.9	0.0	0.0
Total	100.0	100.0	100.0

Table IV. The percentage distribution of emotional expressions in the socio-emotional area of positive reactions.

As Table IV indicates the frequency of individual emotions varied across various IPA categories. For example, the act of showing solidarity was characterized by the frequent expressions of pleasure, while in the context of tension release, almost all emotional expressions were related to amusement. The quantitative picture can be elaborated by qualitative analysis. It demonstrates how the individual emotions were articulated in the context of diverse IPA categories. For the space

restrictions alone, only the most frequent emotions will be characterized qualitatively by providing a few illustrative examples taken from the messages.

In general, showing solidarity, raising other´s status and giving reward is an act which serves the needs of keeping the group integrated (Bales, 1950a, p. 9). In online discussion, positive emotional expressions incorporated in the messages can significantly contribute to this aim. In this particular context, the participants most often expressed pleasure. It was common while presenting greetings or welcoming new participants to the forum. Pleasure was also expressed to strengthen the idea that contributors belonging to the same online community can do more together in order to enhance consumer awareness. Pleasure was also expressed while praising the helpful ideas provided by fellow participants. In this context, emoticons were often used to strengthen the positive message.

Keep up the great work. I love you guys and Gals in Canada. 😊😊 (P-353, T-8)

The participants sometimes expressed relief because the information provided by others had helped them to avoid bad purchase decisions. These expressions were often mixed with indications of gratefulness; however, relief for avoiding an unwanted end result was the most powerful feeling.

Thanks for letting me know. I'm so glad I didn't make a snap decision and just buy it. (P-340, T-20)

Tension reduction within the discussion group is an integral part of discursive interaction in cases in which opposing arguments are presented. To relieve tension, the participants joked and showed satisfaction. In this context, amusement was the predominant emotion. It appeared, for example, in attempts to make fun of well-known brands such as McDonald´s.

Yep, of all the McGarbage they are about the best two. 😁 (P-162, T-3)

Finally, the socio-economic area of positive reactions involves acts serving the ends of decision making about an issue. Such acts include agreeing with others and understanding each other´s views. As indicated by Table IV above, the emotional expressions were very rare in this particular context. Again, amusement was the most frequent emotion. The participants strengthened their agreements with others by presenting humorous notions and positive emoticons.

1000% true, and anyone who says the contrary is wrong. 😊 (P-201, T-3)

Exhibiting negative emotional reactions

The socio-emotional area of negative reactions represents an opposite image in that all emotions expressed in this context were negative (see Table V).

| | Acts that constitute interaction | | |
Emotion	Disagreeing ($n = 6$)	Showing tension ($n = 4$)	Showing antagonism ($n = 90$)
Contempt	50.0	0.0	83.3
Irritation	33.3	0.0	10.3
Doubt	16.6	0.0	0.0
Anger	0.0	0.0	1.1
Disappointment	0.0	0.0	1.1
Frustration	0.0	75.0	1.1
Guilt	0.0	25.0	0.0
Total	99.9	100.0	99.9
	(Due to rounding)		(Due to rounding)

Table V. The percentage distribution of emotional expressions in the socio-emotional area of negative reactions.

The repertoire of emotional expressions was somewhat broader than in the context of positive socio-emotional reactions. The participants were most active to articulate emotions while showing antagonism. In other contexts, the emotional expressions remained rare.

In general, disagreeing is an act that affects the ways in which the participants make decisions in the context of ongoing discussion (Bales, 1950a, p. 9). Although disagreements may be regarded as a major source of negative emotions, they were expressed seldom in the debates about consumer issues. In this context, contempt was the most frequent emotion, and it was directed towards the fellow participants presenting dissenting views. They were shot down by using derogatory expressions by putting the opponents in a ridiculous light.

Quote: Originally Posted by X (nickname anonymized):
"Pickles don't contaminate, Einstein!"

They do if you DON'T WANT THEM, Mr. Dementia. (P-314, T-3)

As an act, showing tension is a negative counterpart of showing tension release. Both acts affect the general discussion atmosphere within the group. However, there were very few cases in which the participants explicitly showed tension related to the ways in which the discussion is organized in the group. However, the participants were sometimes frustrated by messages unrelated to the main topic of the thread.

What a crazy thread this turned out to be! (P-99, T-3)

In the area of negative reactions, emotions were articulated most frequently while showing antagonism. Interaction processes of this type deal with the problems of keeping the discussion group integrated because showing antagonism is antithetic to showing solidarity or giving reward (Bales, 1950a, p. 9). Contempt was clearly the most frequent emotion that was expressed to deflate the status of fellow participants. Often, they were labeled as "trolls", that is, persons who intentionally sow discord on the online community by posting inflammatory or extraneous messages. Sometimes, "trolls" were also labeled as advocates of individual business enterprises.

One old troll here. I was sure his job was a telemarketer. (P-85, T-6)

Irritation was another major emotion expressed in cases in which the participants showed antagonism. One of the sources of irritation was that fellow participants complained about minor issues such as poor service once received at a fast food restaurant or small economic losses due to the purchase of overpriced products.

You have been complaining over 5$ since 28 November 2006! 4 YEARS!!!!! GET OVER IT!!!!! (P-69, T-12)

Information seeking

The picture of the emotional expressions becomes more varied in the tasks areas of "asking questions" and "providing answers" because the acts that constitute interaction incorporated both positive and negative emotions. We may review first emotional expressions in the task area of asking questions (see Table VI).

Emotion	Acts that constitute interaction		
	Asking for orientation (n = 9)	Asking for opinion (n = 12)	Asking for suggestions (n = 2)
Positive			
Amusement	33.3	25.0	0.0
Pleasure	11.1	0.0	0.0
Relieved	11.1	0.0	0.0
Negative			
Anxiety	0.0	0.0	100.0
Surprise	33.3	16.6	0.0
Doubt	11.1	25.0	0.0
Irritation	0.0	25.0	0.0
Worry	0.0	8.3	
Total	99.9	99.9	100.0
	(Due to rounding)		

Table VI. The percentage distribution of emotional expressions in the task area of asking questions.

Overall, emotions were expressed very seldom in information seeking, that is, while seeking for orientation, information, repetition or confirmation. In this context, positive and negative emotions were expressed almost equally often. Of the positive emotions, amusement appeared to be most frequent. The questions for factual information were sometimes accompanied by humorous notions indicating that the questions should not be taken as pushy.

$3 an hour, what year is it in Texas? 🙂😄 (P-201, T-3)

Surprise (in a negative sense) was expressed most often while presenting questions dealing with orientation, information or confirmation.

Didn't you read the ad? It's not free, it costs you $18.95 a dose. 😵 (P-227, T-25)

The questions may also deal with opinion or evaluation. This act indicates the uncertainties about the alternative ways of action. In contrast to the previous category, negative emotions were emphasized more strongly in messages asking for opinion. Of the positive emotions, only amusement was expressed.

I checked and the Mach 3 has 3 blades, vs. the Fusion which I has 5. Thoughts? Please, men only 😄 (P-6, T-9)

Of the negative emotions, doubt and irritation were most common while presenting questions related to orientation, information or confirmation.

http://nouveautechsociety.blogspot.c...h-society.html. Sounds like a scam, and why the "secrecy"??? (P-39, T-8)

Finally, the task area of questions entails cases in which the participants asked for suggestions, direction or possible ways of action. The act of this kind deals with the issues of finding practical solutions to the problems faced by the participants. Interestingly, as specified in Table VI above, explicit emotional expressions could be identified only in two cases. Both of them indicated anxiety. This is mainly due to the fact that the unresolved problems dealt with severe economic problems originating from unpaid debts. The participants had been contacted by debt collection

agencies and their requests had given rise to a state of uneasiness and apprehension about future uncertainties.

> What are they able to do next? Are they allowed to call my employer or to seize a paycheck, or are they going to, at worse, just keep calling home? Any help would be appreciated. (P-372, T-15)

Information sharing

Finally, we discuss the task area of providing answers, that is, sharing information. Table VII specifies the distribution of emotional expressions in this particular context.

| | Acts that constitute interaction | | |
Emotion	Giving suggestion ($n = 19$)	Giving opinion ($n = 162$)	Giving orientation and information ($n = 146$)
Positive			
Amusement	30.0	20.4	9.6
Empathy	0.0	3.7	0.7
Hope	0.0	0.6	0.0
Pleasure	0.0	6.2	1.4
Relieved	0.0	0.0	2.7
Satisfaction	0.0	0.6	2.1
Negative			
Irritation	60.0	16.1	14.3
Contempt	10.0	12.9	0.7
Anger	0.0	1.8	2.7
Anxiety	0.0	3.1	0.7
Disappointment	0.0	1.2	5.4
Disgust	0.0	4.5	2.1
Doubt	0.0	5.6	4.8
Surprise	0.0	6.8	4.8
Fear	0.0	1.2	0.0
Frustration	0.0	3.1	4.1
Guilt	0.0	0.6	0.7
Worry	0.0	10.5	43.1
Total	100.0	100.0	100.0

Table VII. The percentage distribution of emotional expressions in the task area of providing answers.

As Table VII demonstrates, the repertoire of emotional expressions was broadest in the context of acts contributory to the provision of answers. The participants expressed a number of positive as well as negative emotions and none of them appeared to be predominant. On the other hand, many of the emotions such as empathy, anxiety, disappointment, and guilt were seldom articulated.

The act of giving suggestions and direction serves the ends of helping others to identify possible ways of action for problem solving (Bales, 1950a, p. 9). While providing suggestions, the participants mainly expressed negative emotions. Only one positive emotion, that is, amusement, was identified in this particular context.

> Dancing is excellent exercise, not a slow waltz. Lol. (P-323, T-18)

Interestingly, the provision of suggestions was most often accompanied by the expressions of irritation. The popularity of this emotion is mainly due to frequent suggestions directed

to participants labeled as "trolls". Their behavior was perceived as irritating because the "trolls" disturbed normal discussion by posting provocative messages.

Stop trolling, it's against the rules. (P-21, T-3)

Contempt was expressed particularly while providing suggestions about how to deal with pushy telemarketers.

These are just thugs or crack heads trying to squeeze out money, they are not lucid or reputable. DON'T GIVE THEM ANY MONEY. (P-91, T-15)

The repertoire of emotional expressions was broadest when the participants provided opinions, orientation and information. Because the categories of information and opinion are closely related and the distributions of the emotional expressions appeared to be quite similar, these acts are discussed together. Giving information serves the ends of sharing facts, while the process of giving opinion is based on the sharing of personal views and assessments.

Of the positive emotions, amusement and pleasure were most common. They were reported while comparing pleasant consumption experiences, for example.

LOL! They're just regular small chocolates shaped like an egg, with a hard-chocolate shell coating. They are pretty tasty! (P-275, T-5)

Sometimes, the participants expressed hope and relief while providing opinion or information. Expressions of relief were reported in cases in which customers had avoided bad purchase decisions. Hope was expressed in cases in which the contributors believed that customers will become more aware of their rights and will be able to fight against the attempts to rip off people.

One telemarketer down, a several thousand to go. If we're diligent and apply ourselves, we can get 'em all! 🙂 (P-285, T-6)

The participants articulated a number of negative emotions while giving opinions or information. Taken together, worry appeared to be the most frequent emotion in the context of these acts. Worry was expressed particularly in cases in which the participants warned about products with obvious health risks.

High fructose corn syrup is responsible for a dangerous epidemic of obesity and diabetes. People under the age of 45 are "children of the corn." Like Stephen King's thriller, they are reaping the consequences. (P-302, T-4)

Another frequent emotion was irritation. In particular, it was common while reporting experiences of poor service received at restaurants or department stores.

This is the worst service I've been subjected to in many years. Grrrrrr! Getting grouchy in old age! 😡 (P-300, T-11)

The articulations of irritation were often associated with the expressions of contempt. Employees regarded as guilty for the provision of poor service or low quality products were characterized in a derogatory manner.

It just shows how nefarious those scumbuckets can be. 😵 (P-275, T-27)

As a whole, the participants seldom expressed strong emotions such as anger, fear and disgust. Anger was reported particularly in cases in which the participants had received lousy customer service. Different from milder emotions such as irritation, anger indicates a strong feeling of psychological pain caused by others.

> X (enterprise anonymized) are driving my husband loony. He saw his credit report and the debt they claim isn't there. He even tried saying that it was "stat barred" and still they sent him ANOTHER @#&@#@#@#@# letter. 😡 (P-199, T-15)

Fear is a strong distressing feeling aroused by impending danger, whether the threat is real or imagined. Fear was expressed typically in debates focusing on products with obvious health risks. Such expressions often drew on fear appeals.

> Now it appears that the increasingly prevalent nightmare of a disease called "Morgellon's Disease" may be a result of X (enterprise anonymized) crops and food. (P-302, T-4)

Disgust is strong emotion closely related to fear. Disgust was expressed in cases where the participants believed that business enterprises intentionally conceal the health risks of certain products. In addition, the straightforward methods used in debt collection agencies elicited feelings of aversion.

> When I went over there, I was shocked and appalled 😡 to even work for that company! It was absolutely horrible the way the collectors were treating these people!!!!!!!! (P-334, T-15)

Discussion

The most important contribution of the present investigation is the elaboration of the picture of positive and negative emotions in online discussion. More specifically, the study demonstrated the variation of emotional expressions in the sub-contexts of twelve acts that constitute interaction as identified by the IPA model.

The study sought answers to two research questions. First, it was asked, what kind of emotions are expressed in the four functional areas of the IPA model when discussing online about consumer awareness? The findings demonstrate that unsurprisingly, as predicted by the IPA model, only positive emotional expressions were articulated in the context of acts contributory to the socio-emotional area of positive reactions, while in the area of negative reactions, only negative emotions were articulated. However, the findings refine the picture of socio-emotional areas by specifying how individual positive and negative emotions such as amusement, pleasure, contempt and irritation are articulated in these contexts. To the present author's knowledge, no prior studies have devoted attention to this aspect.

Overall, the findings confirm the existence of "negativity bias" of emotions found in earlier studies (Laflen and Fiorenza, 2012; Scherer *et al.*, 2004). People tend to be more aware of negative than positive emotions and the former are expressed more frequently in anonymous contexts of CMC in particular. The present study showed that 42% of the emotional expressions were positive and 58% negative. Interestingly, a similar distribution was found in the survey on the everyday emotions among Swiss people: about 36% of the emotions had a positive valence, 57% negative valence and 7% were rather neutral (Wilhelm *et al.*, 2004, p. 650).

In the present study, the predominance of negative emotions was manifested in the list of five most frequent emotions. Of them, two were positive (amusement and pleasure) and three negative (contempt, worry, and irritation). The popularity of amusement and pleasure is mainly due to the frequent indications of solidarity and tension release. Contempt was among the top emotions primarily because the contributors often showed antagonism towards fellow participants labeled as "trolls" or provided derogatory opinions about telemarketers in particular. Worry appeared to be a frequent emotion due to the popularity of comments warning about products with obvious health risks. The relatively high occurrence of irritation can be explained by that it appeared in the context of altogether six diverse IPA categories, that is, the highest occurrence of an individual emotion among IPA categories. By this criterion, irritation can be regarded as the most typical emotion articulated in the discussion of consumer awareness.

In comparison, Scherer and associates (2004) identified happiness, joy, anger, anxiety, and sadness as the five most frequent everyday emotions. In their study, too, two positive and three negative emotions were among the most frequently experienced emotions although interestingly, there are no individual emotion common to both lists. Similarly, in both studies, strong negative emotions such as disgust and fear were seldom expressed. The above comparison evidences the rich variation of emotional experiences in diverse contexts. The differences are probably due to the diverse methodological approaches and various contexts in which emotions are expressed. The survey conducted by Scherer and associates (2004) was based on self-reports of people who were asked to recall one major emotion experienced yesterday, while the present study examined emotions articulated in online discussion about consumer issues in particular. On the other hand, the findings are not directly comparable because unlike the survey conducted by Scherer and his associates (2004), the present study does not deal with everyday life experiences in general. The focus is placed on a specific situation in which people want to share an experience they had with a retailer or service provider.

The second research question focused on the role of positive and negative emotions in information seeking and sharing about consumer awareness. The findings indicate that emotions play a marginal role in the context of information seeking. This result supports the conclusions drawn in earlier studies (e.g., Fahy, 2005; Savolainen, 2011) demonstrating that the acts contributory to asking questions are relatively rare. In the present study, only 3.7% of all emotion codes (n = 615) were assigned to messages in which the participants asked for orientation, opinion or suggestions. This is mainly due to the fact that questions presented in online discussion tend to be expressed concisely by using one or two sentences. Thus, there is simply less room for words describing the emotion. In this context, positive and negative emotions were expressed almost equally often. Of the positive emotions, amusement appeared to be most frequent, while surprise (in the negative sense) and doubt were most frequent among negative emotions.

The role of emotions was much more significant in the context of information sharing. No less than 53.2% of all emotion codes were assigned to messages giving suggestion, opinion or orientation and information. In addition, the contextual variation of emotional expressions was richest in this context. The acts dealing with the provision of opinion and information appeared to be the most fertile ground for the emotional expressions, both positive and negative. As the messages serving the ends of information sharing tend to be longer than messages indicating questions, the former provide more room for the expression of emotions, both positive and negative. Irritation was the predominant emotion expressed while providing information to others. This is mainly due to critical opinions about consumer rip offs in particular. Overall, the most frequent emotions expressed in the context of information sharing, that is, amusement, pleasure, irritation and contempt were characteristic of the online discussion as a whole. This suggests that information sharing is a context in which the emotions expressed in online discussion can be seen in a microcosm. On the other hand, a particular feature of information sharing about consumer issues was the frequency of the

expressions of worry, mainly due to the popularity of messages warning about products with health risk.

The evaluation of the novelty value of the findings dealing with information sharing is rendered difficult due to the lack of comparable consumer studies operating at the same level of specificity. However, investigations reviewing the features of consumer-generated content (CGC) or electronic word-of-mouth (eWOM) are interesting from the comparative perspective because they examine the ways in which people share consumer information in online forums such as blogs and discussion groups (Ayeh *et al.*, 2013; Flanagin and Metzger, 2013). CGC or eWOM can be positively or negatively coloured. However, emotional expressions tend to more pervasive in eWOM than face-to-face word-of-mouth communication since inhibitions in expressing them in anonymous communications are minimal (Kim and Gupta, 2012, p. 986). Verhagen and associates (2013, p. 1430) found that negative eWOM consists of disclosed individual negative experiences and opinions about goods, services and organizations that have been formed during and after the consumption process. When consumers are confronted with negative consumption experiences eliciting emotions of anger and disappointment towards the service provider, they tend to share these negative experiences openly online. The results also suggest that when consumers express themselves negatively online about a product or service, they do not just do this for themselves but also with the objective to help other community members (Verhagen *et al.*, 2013, pp. 1436-1437). Thus, consumers may share negative experiences in order to assist other community members by informing about low quality products or unfavorable customer service, or to provide constructive feedback to the company perceived as being responsible for the dissatisfied experience (Verhagen *et al,.* 2013, p. 1431).

The findings of the present study support the above findings. Information sharing was accompanied by the expressions of both positive and negative emotions, although the latter were somewhat more frequent. Compared to the above studies of CGC and eWOM, however, the present investigation provided a more detailed picture of the role of individual emotions such as pleasure and worry. This suggests that approaches to CGC and eWOM can be elaborated by going beyond the rough dichotomy of positive versus negative emotions.

Conclusion

Emotional expressions form an integral part of online discourse and they play a significant role in information sharing in particular. Emotional expressions are contextually sensitive in two major respects. On the one hand, the topic of discussion affects how positive and negative emotions are emphasized. Topics such as consumer awareness seem to be less biased to negative emotions than politics, for example (cf. Laflen and Fiorenza, 2012). On the other hand, emotional expressions vary with regard to function of acts that constitute discursive interaction. Emotional expressions differ while agreeing with others or providing a critical opinion about an issue, for example.

As the findings of the present study draw on an explorative study of online discussion about a particular topic, that is, consumer awareness, one should be cautious in the generalization of the empirical results. This is partly due to the low number of data samples in some IPA categories, for example, asking for suggestions, and showing tension. Thus, the findings cannot be expanded and presented as if true of all online discussion platforms. Given the wide variety of topics discussed in online forums all over the world, however, this caveat concerns all empirical investigations; the generalizability of their findings is necessarily limited. To substantiate the picture, there is a need to conduct comparative studies in other consumer online forums, as well as other subject areas, for example, learning, health and hobbies. Such studies would shed additional light on the nature of affective factors in information seeking and sharing taking place in online forums. In addition, discussion groups should be put in a broader context by comparing the nature of emotional expressions in forums of social media such as blogs and Facebook.

Further research is also needed to elaborate the methodological approaches to the study of affective factors in online interaction. Due to the needs of explorative study, the conceptual framework employed in the present study drew on the list of discrete emotions; no attention was devoted to mixed or blended emotions. In addition, only emotions expressed explicitly were analyzed. There is a need to refine the conceptual tools to capture the mixed and implicit emotions, too. To this end, the potential of alternative ideas proposed by appraisal theories of emotions (Ellsworth and Scherer, 2003) should be tested in future studies on online discourse. Furthermore, discursive interaction processes may be approached from alternative theoretical perspectives, for example, conversation analysis (Peräkylä, 2004). Compared to the IPA model, conversation analysis may provide better opportunities to examine the display of emotions as an interactional phenomenon that is intrinsically embedded in the sequential organization of online discussion.

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