

Regulation of emotional attitudes for a better interaction: Field study in call centres

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Abstract

This paper investigates the management of emotional attitudes in the customer-commercial adviser communication. This work is related to the declination of certain processes observed in the human communication to a future human-machine interaction, specifically the way emotions and attitudes are imparted in a human's speech and how the interlocutor reacts in return. A field study has been conducted in two call-centres dealing with telecommunication products. Seventeen commercial advisers have been interviewed. The main results show that the detection of emotional attitudes in customers' speech by commercial advisers and the reaction adopted in answer are based on four types of indicators: voice qualia cues, linguistic cues, prosodic cues and behavioural and environmental cues. The particular case of irritation is discussed.

Key words: emotional attitude, human-human interaction, regulation, detection, voice

1. Introduction

Nowadays, the studies dealing with the human-machine interaction aim directly or indirectly at getting more naturalness in the interaction. For a major part, this means an interaction based on natural dialog with natural language. The speech is the language the most studied in the context of human-machine interaction. One of the important characteristics of spoken language is the simultaneous transmission of linguistic, paralinguistic and non-linguistic information. As an emotional information in a spoken utterance can be lexically encoded but can also be provided paralinguistically (*eg.* prosody) or non-linguistically (*eg.* voice quality) [Reilly (2003)], the study of emotion in speech is particularly difficult since the researchers try to link together the three types of information.

Nevertheless the interest in emotions is not of minor importance. Indeed, emotions play a central role in the perceptive and cognitive processes as attention, memorisation, problems resolution or decisions making [Scherer (1984)] [Frijda (1986)] [Panksepp (1998)] [Loewenstein (2003)]. Moreover, some studies have shown the importance of emotions in the social relations, in particularly their regulator role in human communications [Buck (1984)] [Forgas (2003)]. If emotions play a so important role in the interactions between humans (and animals [Darwin (1872)]), why wouldn't they be involved in the interactions between humans and machines [Picard (1997)]? [Reeves (1996)] have shown that the interactions between human-computer are similar to human-human interactions. The affective computing has conducted many researchers to study the improvement potential of the human-machine interfaces which would take into account emotions. Nowadays many voice services based on a human-machine interaction are developed but they are deaf from an emotional point of view though some users' emotion expressions degrade the interaction. Also take into account

emotions in human-service interaction could regulate the interaction (understanding of the information) and increase its quality.

The quality of the employee-customer interaction is one of the most important things in service jobs. The emotional style is an integral part of the service itself [Hochschild (1983)]. Studies on emotional behaviours (specifically aggressive) generally focus on intra-organizational members as the source and targets of these emotional behaviours. The concept of emotion regulation is used as including all the conscious and unconscious efforts to increase, maintain, or decrease one or more components of an emotion [Gross (1999)]. Some studies have specifically worked on the emotional behaviours coming from people who work in the organizations in after-sales services. In this case, the concept of emotional labour is used to describe both congruence [Hochschild (1983)] [Zammuner (2003)] and dissonance [Zerbe (2000)] [Rozilio (2004)] between genuine emotions, displayed emotions and job requirements. The management of the customers' emotions and of their own emotions is a total part of the commercial advisers' everyday work.

Our study is related to the declination of certain processes observed in the human communication for future human-machine interaction. This paper relates a study conducted in call centres. The objective was to draw up a list of indicators allowing commercial advisers to qualify the emotion perceived in customers' speech and to focus on determinant elements characterising the answer/reaction of commercial advisers. In the particular case of this human communication where the customer calls voluntarily a commercial adviser to ask information or more often to express a problem, it would be more exact to use as a general expression *emotional attitude* than emotion. Indeed, emotional attitudes concern both emotions defined as expressing involuntary an emotional state and attitudes defined as expressing the intention of the speaker and produced by the speaker in order to influence the interlocutor's reaction in the communication act. Subsequently, our work deals with emotional attitudes.

2. Setup of the field study and data collected

Two call centres have been visited. The first visit is dedicated to an internet service and the second one is dedicated to a mobile service. Seventeen commercial advisers (eleven women and six men) have participated to the study. All of them work in call centres since at least two years, either on technical or commercial or reclamation or information jobs. Although the commercial advisers have not received a dedicated formation on the "management of the customers' emotional attitudes", they are considered as expert of the regulation of the communication by their managers.

Two methodologies have been used: individual interviews (with five commercial advisers) and focus groups (with twelve commercial advisers by group of four). The individual interviews facilitate the commercial advisers' freedom of expression. The focus groups allow a commercial adviser to react according to an answer of a colleague (if he/she agrees or not, what more information he/she can bring, etc.).

In a first step, it was asked to the commercial advisers to enumerate all the different emotional attitudes the customers can have during the call. They had to explicit the indicators allowing them to identify each emotional attitude in the customer's speech. In a second step, the commercial advisers had to explain which attitude (as conscious reaction) they try to adopt in answer to the different customers' emotional attitudes cited. In a third step, the commercial advisers listened to two customers' voice messages left on an answer phone concerning assistance demands. It was asked them to talk about their feelings when listening to the messages, to identify the emotional attitudes expressed by the customers, to characterize them by precise indicators and to imagine how they would treat the call and what reactions they

would have.

During the whole interviews and focus groups, the commercial advisers had to be spontaneous, to react relatively to the ideas of the others and to give as much as possible examples of conversations with customers to illustrate their talks.

The data collected are free verbalisations on both emotional attitudes perceived in customers' speeches and attitudes adopted by the commercial advisers. All the meetings were recorded, transcribed and analyzed. Note that working with different products the two call centres present their own characteristics (like the specificity of the purposes of call). As part of this paper, it was decided to present the common data.

3. Results

3.1 Commercial adviser's behavioural principles

In the category of service jobs, the profession of commercial adviser in a call centre has its own characteristics: the communication between the employee and the customer is a vocal interaction and the major part of the time, it is the customer who calls the service. He/she has then a request. In order to get the better interaction as possible (including the answer given to the request), the commercial adviser has attitudes and behavioural principles laid down by him/herself by his/her formation and experience. All the commercial advisers interviewed are agreed to say that it is necessary: to be polite, to be steady and stay dominant in relation to the customer (ask the purpose of the call immediately, talk with short sentences and closed questions, be sure of what they answer and say it clearly), to be reassuring (take into account the request by reformulating, give a date of the request's taking into account, in the speech by a slower rate), not to show a negative state (like anger, stress), not to show a negative behaviour (avoid sighs, contempt, irritation, to be to customer's discredit).

These attitudes and behavioural principles, including emotions regulation, constitute a sort of course opens to the commercial advisers. Nevertheless these practices can be modified according to the emotional attitudes perceived in the customers' speech.

3.2 Emotional attitudes perceived in customers' speech and indicators

In the interaction between customers and commercial advisers in the case of call centres dealing with telecommunication products, the emotional attitudes mainly detected in the customers' speech are negative, linked up with difficulties they have.

The more often emotional attitude perceived by the commercial advisers in the customers' speech is the irritation. Indeed, studies have showed that call centres employees received calls from verbally aggressive customers daily [Korczyński (2003)]. Anger and fury are not uncommon emotional attitudes, quite the opposite. The customers can be dominant, proud, contemptuous, and haughty, certain customers even blackmail the commercial advisers. Others express anxiety and stress. Some of emotional attitudes are particularly related to the personality of the customers like timidity and embarrassment. Certain customers are absent-minded and the commercial advisers have the sentiment that these customers aren't giving the commercial advisers' answers their full attention. According to the answers given by the commercial advisers, the customers can express positive or negative surprise, deception, frustration, and lassitude.

All of the emotional attitudes are detected in customers' speech according to four types of indicators: the voice qualia cues, the linguistic cues, the prosodic cues and the behavioural and environmental cues. At any moment of the interaction, the commercial adviser links together information coming from these four types of indicators to build his/her judgment on the emotional attitude expressed by the customer.

Voice qualia cues. Pitch, loudness, timbre and all elements related to the vocal source parameters constitute the voice qualia cues. According to the interviewed commercial advisers' opinion, a smiling voice is a characteristic of a joyful mood. A monotonous tone is a sign of deception and lassitude. Timid persons don't speak very loud and silences can be detected in their speech.

Linguistic cues. The linguistic cues of emotional attitudes are various. The first main indicator cited is the length of the sentences, for example, the sentences are very short in case of timidity and embarrassment. The customer only answers yes or no. The second is the repetition, for example, in case of anxiety and fear, the customer repeats the same question in order to get the repetition of the commercial adviser's answer. The third is the use of the imperative mood when the customer imposes his/her stress ("*Hurry up*", "*Be quick about it*"). The fourth is the vocabulary and verbal expressions. According to the emotional attitude expressed by the customer, the vocabulary used by him/her in his/her speech can be thanks (in case of satisfaction and joy), or excuses (in case of fear to be judged), or coarse words (in case of contempt), or verbal expressions as "*I'm going to...*" (for blackmail) or "*I'm sick of...*" (for lassitude) or "*Are you sure ... ?*" (for anxiety or surprise) or "*Yes, but..*" (for anxiety).

Prosodic cues. A rapid speech rate is a prosodic cue on which the commercial advisers build their judgement to detect anxiety and stress. A haughty and dominant customer has a curt intonation, well articulated, and a rather slow speech rate. The conversation with a timid customer seems to be slow.

Behavioural and environmental cues. There are two sorts of behavioural cues. First the non-verbal punctuations like sighs or swallowing noises accompanied with hesitant beginnings are respectively indicators for the commercial advisers of lassitude and embarrassment. Second, specifically in the case of lack of attention, the customer can speak in the same time than the commercial adviser, or can do things his/her own way, indeed he/she doesn't answer at all. The environmental cues are environmental noises like baby cry or door bell which may be the source of the customer's anxiety. These cues can also be specific noises related to the handling of mobile phone as, for example, when the commercial adviser asks the customer to follow a procedure like typing on one key and he/she hears "*Tac tac tac*" which is a sign of lack of attention.

The particular case of irritation. Because the irritation is the main emotional attitude perceived by the commercial advisers in customers' speech, it is interesting to focus on this particular emotional attitude. There are two sorts of irritation.

First the irritation out of the purpose of the call is often related to the waiting time. The customer doesn't say hello, speaks about the waiting time and argues that he/she pays. He/she speaks haltingly and loud right from the beginning of phone call. Second, the irritation related to the purpose of the call is characterized by louder voice, quite short sentences, and rapid speech rate. Irritated customers don't let the commercial adviser speak. They have always something to say: either they repeat the same thing or they get going on other subjects. They are often impatient: detected in their speech by non-verbal punctuations (like blows) or verbal expressions (like "*We waste time*").

Sometimes, irritation goes further in intensity and becomes anger and fury. For the interviewed commercial advisers, furious customers' speech is a stream of words. These customers yell at commercial advisers, adopt a directive tone ("*I want it to work today*", "*Give me your name*"), use terms of abuse, and ask to speak to the manager.

Angry can also be expressed calmly but firmly. In this attitude of cold angry, customers use very precise and polite terms, without repeating and insisting.

3.3 Emotional attitudes produced by commercial advisers and indicators

The above-mentioned indicators of emotional attitude detection in the customers' speech lead to study in which way commercial advisers adapt their answer and how they manage the interaction with customers. Dialog regulation by commercial advisers refers to a broad diversity of processes that help most of the time to modify, attenuate or maintain the customers' emotional attitudes. We next enumerate the indicators that the commercial advisers implement in their behaviour.

Two indicators have been identified to produce suitable answers: verbal reaction indicators and non-verbal reaction indicators. Verbal reaction indicators can be divided in lexical markers (utterances, vocabulary) and prosodic and voice qualia markers (rate, intonation, intensity). Non-verbal reaction aim to stop or to reduce a too high negative emotion detected in customers' speech and/or felt by advisers.

Lexical markers. The regulation of customers' emotional attitude with lexical markers is characterised by the use of expressions like *"Ok. I quite understand your request"*, or *"Don't worry, I'll take care of you now, we'll find a solution together"* to reassure customers with approving reaction and support like *"I understand you"*, *"you're completely right"*, *"It's simple..."* or *"I'm here to help you"*. This reaction seems to be essential in the regulation of the interaction in order to defuse a situation of conflict. The case of anxious customers is treated with agreement expressions and reformulations like *"All right"*, *"Then, if I understand rightly..."*. An indicator like personalisation corresponds at least to two repetitions of the customer's name to show customers they are kept at bay. Another goal of the use of some lexical expressions is to change customers' attentional focus. In this case, advisers take initiative as soon as possible to interrupt negative state of the customers in order to conduct the dialog positively with expression like *"How can I help you?"*. Lastly, lexical markers are used either to rationalize a process or to make it clear that commercial advisers' attitude is not affected when customers exert blackmail. Commercial advisers can use expressions like *"Now, you will ..., then you will ... and you will ... then it's not the best solution"*.

Prosodic and voice qualia markers. Some verbal reactions are produced in commercial advisers' speech by the use of prosodic markers. Series of successive indicators like silence and calm tone of voice result in disconcerting customers. If the first advisers' reaction is often to let customers speak while keeping their composure, the second reaction implemented variable prosodic cues. Either they lower their rate and tone and speak softly to pacify, or from time to time, they raise their tone, which becomes curtly and domineering to hold the reins. In any case, the responses and questions are short and somewhat quick to give rhythm and dynamism to the interaction. To attract customers' attention, advisers use a pleasant but directive tone at the same time, most of the time when they are inattentive or disturbed. To refocus the attention, advisers have to employ kind tone in the imperative mood like *"Wait, listen to me"*, *"Make what I tell you word for word"*. Finally, another indicator which can be ambiguous is laughter. It's an answer to blackmail as much as to satisfaction, joy and amusement with smiling voice.

Non-verbal reactions. When commercial advisers are confronted with negative customers' emotions like frustration, annoyance, or anger, different non-verbal reactions can be adopted. This is the case when the advisers' reaction is a lack of answer. This temporary break-up is

used as a manner of interactions' regulation with customers who don't hear advisers speak as long as they have something to say. It's more than ever true with disdainful, haughty or proud customers. When customers are disrespectful toward advisers or irate, it happens to commercial advisers to use "mute" functionality not to let their own emotion to get the upper hand in the interaction with customers. It allows them to give vent to their anger without customers hearing and it brings relief to commercial adviser. In this case, they have to manage the clash between their negative emotions and the attitude they have to do. They are completely in an emotional dissonance. The reaction can also be more radical. Indeed, on the rare occasions when customers insult their interlocutors, commercial advisers bring round to hang up by prejudicing them with message like *"It's not necessary, if you continue like that, it's no use continuing our conversation. I hang up"*, or like *"If I'm incompetent sir, have a nice day (then, hang up)"*.

To go further in the analysis of the commercial advisers' reactions, and among their diversity, the reaction against irritation seems to be important because of its impact on interaction. Indeed, the role of the irritation regulation is perceived particularly as important because taking part in the success of the call.

The particular case of reaction against irritation. In the case of a highly nervous state, which is more often linked with waiting time than with the motive of call, silence is the first advisers' reaction. The aim of commercial advisers in this situation is to let customers express themselves. Next, advisers remain quite calm, answers are short and fast, questions are also short, the tone of voice is lower, and the rate is slower. On the other hand, when customers express irritation, commercial advisers lose more easily their patience. They use cold and indifferent tone, but still give short and fast answers. On the contrary, against the expression of anger, commercial advisers modify their reaction to succeed more efficiently in subduing rapidly negative emotion by raising their voice before giving explanation and facts evidence. Commercial advisers know that customers feel if the commercial advisers stand up to them or not, and will be submitted. So it's important to regulate dialog with particular domination. To conclude this section, the widely shared rule of dialog regulation is to have positive attitude in order to subdue negative emotional attitude.

4. Conclusion and current directions

Make humans speak about emotion is difficult, but results show that emotional attitudes are detected and expressed by putting several indicators forward: linguistic, prosodic, voice qualia and behavioural. They convey often intentional goal shared by commercial advisers and allow flexible and more natural answers to each situation, event and profile of customers. Certain emotional attitudes previously cited put in light the acuity of the human perception and the non-sense of certain behaviours reproduced in the human-machine interaction. This latter can partly be explained by the fact that the system doesn't need to regulate its own emotions.

In any case, systems able to detect and express emotions will probably imply evolutions in human-machine interaction with also taking into account human behaviours evolution. For example, although it is nowadays observed a slight presence of expressions of emotions in the human-machine interaction, it is conceivable to make the hypothesis that the introduction of emotional attitudes in interactive system will encourage the expression of user's emotions. More globally what will particularities of such evolutions be in interaction? In comparison of human-human interaction, will new strategies specific to interactive system be generated?

Moreover, trying to model emotional attitudes in online interactions requires going further investigations to know the role they play in facilitating and regulating the achievement of the

motive of call like negotiation of information and action, mutual understanding, decision taking or social regulator. In this view, it seems important to improve acknowledgement about mental state of the customers to refine the system's reaction. Further, results show that a difference can be perceived among irritated customers and is classified in two profiles by commercial advisers: nice and dominant customers. Take into account customers profiles and react according to them has to evoke the question of personality of system as an ambitious aspiration.

In the continuity of this work, a study aiming at characterising finely the strategies through an immediate analysis of calls with the commercial advisers is currently carried on. The results will allow the identification of a typology of strategies that will be tested into wizard of Oz experiments. Finally it will be interesting to consider how users accept such systems which react to their emotions.

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