

Title	コミュニケーションにおける笑いの出現パターン：遠隔キーボード対話と対面音声対話の比較
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# Distributions of smiles and laughs in communication : comparing remote keyboard dialogues and face-to-face spoken dialogues

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The factor of the laughter in everyday life has not only mere joy or mere pleasure but also a social demand. (For example, we smile nonchalantly, and when greeting with an acquaintance all over a town, when the senior of a university and the superior official of a company say a petty joke, a forced smile is smiled.). In addition, we laugh variously in various scenes. Then, what function do various forms (expression, a sound, a nasal sound, etc.) of laughter in communication have respectively? This research considers the influence relation between the function of each form and a different function by analyzing a distribution of the forms of the laughter in an actual dialog

Laughter is various functions action which appears to various form, the context, frequency, and timing in the scene of communication. And it is complicated action that changes also with culture or sex. While the diversity of this laughter is interesting of research of laughter and it makes research of laughter very complicated and wide range. For this reason and the researcher of many laughter has adopted the method of applying and analyzing a focus in the specific character which laughter has. Then, the example of precedence research is shown below.

1 . Research which distinguishes social laughter from physical change which starts at the time of laughter generating.

Ex) Research which describes finely a motion of each part of the face in the time of laughing.

Research which measures brain waves.

Research which measures a motion of the muscles of expression by the electromyogram.

2 . Research which analyzes laughter from development and evolution of laughter.

Ex) Research which compares laughter of an ape and human being.

Research which observes change of laughter of infants.

However many researches now remain in form-analysis of laughter, there is little research treating the laughter in a natural dialog scene. It is because it is very difficult to extract and analyze laughter from an actual dialog since laughter appears to various contexts and timing. Abe et al. (1999) analyzed the function of voice laughter by comparison of the appearance frequency of the laughter in a facing dialog and a telephone dialog. Then, this research uses Abe's et al. method for, and measures the appearance frequency of the laughter in a different dialog form. However, Abe's et al. research was a comparative study of the remote dialog by the artificial thing, and a facing dialog to the last, and was not comparison of a dialog which clarifies the character of laughter of communication. Then, in this research, the chat dialogs which are the dialog form which physical operation which happens when laughing hardly transmits to a dialog partner, such as vibration of expression, a sound, and the shoulder, were observed. In a chat dialog, since body operation is not transmitted to a dialog partner, it does not have an effect as a signal of communication. Since it is thought that this character of a chat dialog is contrastive with a facing dialog, this research compares a chat dialog and a facing dialog.

Moreover, it does not restrict the form (vibration of expression, a sound, and the shoulder etc.) of laughter being always single, and being expressed, but two or more form may be expressed simultaneously. However, precedence research has many which focused only on a single form and analyzed laughter. Then, this research considers the function which the form of laughter itself has, after comparing some form of laughter and analyzing also about the compound pattern of the form of the laughter.

That is, a distribution is compared with the appearance frequency of each form of laughter in a facing dialog and a chat dialog for carrying out the function of communication which each

form of laughter has for whether being dawn in this research

In preliminary inclusion, the facing chat dialog was compared with the non-meeting chat dialog, and the appearance frequency of expression laughter was investigated. From there, a possibility that it was related to an appearance distribution of the laughter in a possibility that a difference is in an appearance distribution of the form of laughter, the degree of experience of a chat, and each dialog was suggested on facing conditions and the conditions of not meeting, as two keys which lead to this inclusion.

Based on them, three hypotheses were formed by this research.

In order to investigate about the communication function of the form of laughter first, the appearance distribution of the form of laughter in the chat dialog in which only a private portion exists in the function of the form of the laughter with the facing dialog in which the private portion of function of the form of laughter and the communicative portion are intermingled is compared. Then, the following hypotheses were formed.

#### Hypothesis 1

In the facing voice dialog and chat dialog by the deep subject group of chat experience, the laughter from which appearance frequency is different exists.

Next, the following hypotheses were formed in order to investigate about an involuntary change of the form of the laughter to change of the dialog environment shown by the result of preliminary inclusion.

#### Hypothesis 2

The appearance frequency of the form of laughter changes in the order of the facing dialog, the chat dialog by the shallow subject of chat experience, and the chat dialog by the deep subject of chat experience.

It is thought that laughter is compound expression of the form of various laughter, and the form of each laughter influences and suits it. Then, in this research, in order to investigate about the influence of [ between the form of laughter ], it will find what variation is in an appearance distribution of the compound pattern of the form of laughter. Then, the following hypotheses were formed.

#### Hypothesis 3

An influence relation between the form of laughter is and the result is reflected in the

appearance tendency of a compound pattern.

Dialog inclusion performed the free dialog for chat dialog 60 minutes for facing voice dialog 20 minutes. Since the appearance frequency of a chat dialog and a facing dialog cannot be simply measured as analysis, in order to investigate first whether there is any tendency of an appearance distribution of the form of each laughter It authorized, standard residuals which is the value which standardized the blank value from the tendency of each whole appearance frequency was computed, and the tendency of a distribution was analyzed.

The hypothesis was proved by a nasal sound laughter and voice laughter as a result of verification of a hypothesis 1.

The hypothesis was proved by a nasal sound laughter and expression laughter as a result of verification of a hypothesis 2.

As a result of verification of a hypothesis 3, it became the order of voice laughter, a nasal sound laughter, and expression laughter from the strong one [ influence ] between each form, it was shown that a difference is in the influence between each form, and the hypothesis 3 was proved.

As a result of hypotheses 1 and 2 and verification of three, each form of laughter was classified from the viewpoint of the influence between a communication function, involuntary nature, and form, and the consideration from a partial tendency also added it.

#### Nasal sound laughter

Nasal sound laughter is laughter with a more strong private function, and has both the involuntary side and the optional side. And the a nasal sound laughter with a private function is almost accompanied by voice laughter in the facing voice dialog, and a function is communicativeized by voice laughter. Moreover, when a nasal sound laughter stopped being influenced of voice laughter, it was suggested that a upward tendency is shown.

#### Expression laughter

Expression laughter does not have a strong communication function, but appears in the appearance scene of almost all laughter. However, since the deep subject of chat experience expressed the laughter accompanied by expression, the slightly involuntary tendency of expression laughter is stronger, and a possibility of having a communicative function is guessed.

### Voice laughter

Voice laughter is laughter with a more strong communicative function, and is quite optional laughter. Since it accompanied in the case of [ most ] many which a nasal sound laughter expresses in a facing dialog and the function of a nasal sound laughter changes communicative, it was considered that there is a facing adjustment function to a nasal sound laughter. Moreover, it was also considered from a nasal sound laughter having shown the upward tendency in a chat dialog that there is an increase control function of a nasal sound laughter.

As mentioned above, this research showed the communication function of each form of laughter from comparison of an appearance distribution of a facing voice dialog and a chat dialog.