

# Implicit Referring as an Indication of Familiarity in Face-to-Face and Phone Conversations.

Gunnvald B. Svendsen & Bente Evjemo

Telenor Research and Development

P.O.Box 1175, N-9262 Tromsø, Norway

Email: <gunnvald-bendix.svendsen/bente.evjemo>@telenor.com

**Abstract:** A large body of research shows that familiarity between speakers makes their use of referring expressions more effective. This paper presents two studies that suggest that it's also the other way around, i.e. effective referring, in this case implicit referring, suggests a relation between the speakers. Further, a third study, based on naturalistic observations of both work and private conversation, shows that implicit referring is used less when conversation is mediated by phone. Together the results indicate that the "distance" or "alienation" often felt in phone conversations could be the result of subtle changes in the way we speak rather than reduction in transmitted information compared to face-to-face conversations.

**Keywords:** Grounding, familiarity, telephony, language, CMC, relations

## 1 Introduction

When two people talk they establish mutual ground (Clark & Marshall, 81). Referring is a central aspect of this grounding process. The first time a topic is introduced the referring might be rather complex, as in "I'm looking for an invoice from Doe et co, it's pink and letter-sized" But, as has been shown in numerous studies, the complexity of the referring phrase is reduced when the topic is introduced anew at a later stage (Krauss & Fussel, 90), as in "Could you help me find the invoice". Implicit reference is arguably the most extreme simplification of the reference process. ("I have found it"). A salient feature of implicit referring is that it implies a shared history between the conversational partners. Thus it could also be used to suggest a relationship between them. Take the following example. Two strangers, a man and a woman meet by chance in front of the water cooler. The woman says, "Oh it's warm today, if it's as warm tomorrow I'll put on a T-shirt." Man: "yes ... yes". The next day the man passes the woman in the corridor, smiles and says: "T-shirt today I see".

The meaning of the utterance "T-shirt today I see", is neither that the speaker is able to see, nor that the T-shirt wearer must be made aware of her

clothes, but more in the line "Remember me? We talked yesterday, I remember what we talked about, and you are not irrelevant to me". By gauging the listener's reaction to the utterance the speaker can ascertain whether the listener remembers the earlier conversation. *The first question this paper explores is the assumption that implicit referring suggests a relation between the speaker and the listener.* The first and second studies presented below investigate this hypothesis.

A second salient feature of implicit references is the ease with which they can be misunderstood. As long as the listener understands what the speaker is referring to, an implicit reference is a very effective way of communicating. On the other hand, if the listener fails to comprehend the utterance it is less effective than an explicit reference. The effect is even worse if the listener fails to comprehend and the speaker fails to detect this. Since phone conversations provide the speaker fewer indications of the listeners understanding, *our second hypothesis is that telephony reduces the amount of implicit references compared to face-to-face communication.* This hypothesis is addressed by the third study below.

## 2 Three studies

### 2.1 First study

Is use of implicit referring indicative of a relation between speaker and listener? If it is, subjects should infer that people who use implicit referring know each other better than people who use explicit referring. An experiment was conducted to test this assumption.

#### 2.1.1 Method

Thirty-four subjects (ss) aged 24 to 50 participated in the study. The ss were recruited one by one from a student population. The ss were not paid. Ss were randomly assigned to the two groups: Implicit – Explicit (Imp-Exp), n= 18 and Explicit – Implicit (Exp-Imp), n=16. Both groups received the same instruction.

The experimental material consisted of a printed sheet of paper with instruction, description of a situation and alternatives for the ss to fill in.

Ss were told that they should imagine themselves standing behind two people in a bar, and that one of the persons turned to the other and said something the subject overheard. Ss were told to imagine that this happened on four occasions differing only in the sentence they overheard. The four sentences could just as well be said between strangers as between friends. The four sentences had both an implicit and an explicit form. The first sentence read: “RBK<sup>1</sup> has won the league again” in its explicit form. In its implicit form it read, “They have won the league again.” The sentences alternated between implicit and explicit form, thus half were implicit and half were explicit. The sentences were presented in the same order to all the subjects. In the Imp-Exp group the first sentence was implicit (“They have won the league again.”) in the Exp-Imp group the first sentence were explicit (“RBK has won the league again”).

The ss were told to rate how well the two people knew each other on the basis of what one said to the other. They were asked to give the sentence representing the couple that knew each other best a score of one, while the sentence representing the couple that knew each other the least should get the rating of four. No sentences should have the same rating.

#### 2.1.2 Results

The mean rating for the four sentences in the two groups is shown in table 1. As can be seen, the implicit form, marked with “I” in the table, gives the lowest rating in each of the four sentences. The mean of the pooled ranks for the two implicit and the two explicit sentences is 1.9 and 3.1 respectively. A one-tailed t-test of the difference between the means gives  $p < 0.001$ .

Group	Sent 1	Sent 2	Sent 3	Sent 4
Exp-Imp	E: 2,9	I: 2,2	E: 3,3	I: 1,6
Imp-Exp	I: 2,3	E: 3,2	I: 1,6	E: 2,8

**Table 1:** Mean rating of sentences in the two groups

The results thus support the assumption that the way referring is done (either implicit or explicit) reflects how well people know each other.

### 2.2 Second study

While the first study shows that an observer would assume that people who use implicit reference know each other better than people who use explicit referring, it doesn't show that people who are well acquainted *in fact* use implicit referring more than people with less close ties. The second study investigated this.

#### 2.2.1 Method

If people who are well acquainted use implicit referring more than people who are less well acquainted, the frequency of implicit referring should be higher in families than between colleagues and higher between colleagues than between strangers. Thus observations of conversations between family members, between work colleagues, and between strangers were conducted.

The authors did the observations of conversation between family members in their own families. One family consisted of mother, father and two children, ten and fourteen years old. The other family consisted of mother and father and one child eight years old. The observations were done in two consecutive two-hour sessions, after work. Utterances originated by the observers were not counted.

The observations of conversation between colleagues were done in an open office space

<sup>1</sup> Well known, local soccer club

divided into cubicles by 1.5 m high moveable walls. The workers, who worked with maintenance and planning of a large communication system, knew each other well but worked for different departments in the same company. Between five and eight workers were present during the observations. The observations were done in five three-hour sessions during one month. Before the first session, the observer asked each worker individually for permission to observe the conversation going on in the room. The workers were told that the observer was engaged in research on work place communication and that the observations would not result in information that was traceable to them as individuals. Due to privacy concerns the conversations were not taped. However, the observers had ample opportunity to write down what was said, as the total number of significant utterances in the period was 85, i.e. somewhat less than one per ten minutes.

The observations of conversations between strangers were done in three environments, in a public library, in a bar and in an open-air marketplace. These observations posed some difficult ethical and methodical dilemmas. Methodologically the soundest approach would be to tape the conversations. However, if the conversations were taped, the observers would have had to obtain the subjects permission to use the tape. This would in turn made the study impossible to conduct due to work and time constraints. Thus the observers wrote down the utterances verbatim. Since the utterances were made in public spaces and wouldn't be traceable to the speaker, it was not deemed necessary to ask permission to use the utterances.

In all three environments the observers were instructed to record verbatim and timestamp the first referring expression in all conversations that occurred. They also recorded the conversations theme or subject matter.

To classify an utterance as implicit, three conditions had to be satisfied. 1) The utterance must not contain an explicit reference to the subject matter. 2) The speaker must be collaborative, i.e. he or she must speak the utterance in the belief it will be understood. 3) One or both speakers must have discussed, or been engaged in, another subject matter since the one referred to was discussed or experienced.

Two people trained to use the scoring criteria scored all records independently. On four occasions the scorers didn't agree. These disagreements were resolved after discussions with the observers.

### 2.2.2 Results

The results are presented in table 2. As can be seen the proportions of implicit referring in the three populations are as predicted. A  $\chi^2$  test is significant at the 5% level ( $\chi^2=7.4$ ,  $df=1,2$ ,  $p < 0.05$ ).

	Family	Colleagues	Strangers	Tot
Implicit	9(26%)	9(11%)	1(4%)	19
Explicit	26(74%)	76(89%)	25(96%)	127
Total	35	85	26	146

**Table 2:** Explicit and implicit referring in the three categories

Thus, the more familiar people are with each other, the more they use implicit referring.

## 2.3 Third study

The two first studies show that implicit referring is used to infer a relation between people and that it is used more between people who know each other well than between people who don't. This goes a long way to confirm the first hypothesis set forth in the introduction. The second hypothesis states that implicit referring is used less in phone conversations than in face-to-face conversation due to the risk of misunderstanding. This hypothesis is investigated in the third study.

### 2.3.1 Method.

Five office workers, from the same office as in study 2, tape-recorded all incoming phone conversations during one week. For each phone conversation the office workers recorded their relation to the caller, whether the caller was a stranger, a family member, a close or a distant colleague. A total of 81 conversations were taped. All calls originating from other than close colleagues were discarded, thus making the conversation partners comparable to the conversations between the colleagues in study 2, and reducing the number of conversations to 50. The tape recordings were transcribed. Each phone conversation was scored with respect to implicit and explicit referring using the same criteria as in study 2. Two independent judges did the scoring. The judges identified the same implicit references.

2.3.2 Results.

The results, which are in the predicted direction, are presented in table 3. The column marked "F2F" (face-to-face) is identical to the column marked "colleagues" in table 2. Since the expected value is less than 10 in half of the cells, a  $\chi^2$  test is not appropriate (Hayes, 74). Fisher-Irwins test is used instead. The expected amount of implicit referring in phone conversations is 3.7 with a variance of 2.17. Normal approximation to the hypergeometrical distribution gives a significant result at the 5% level ( $z=1.83, p<0.05$ ).

	Phone	F2F	Tot
Implicit	1(2%)	9(11%)	10
Explicit	49(98%)	76(89%)	125
Total	50	85	135

**Table 3:** Explicit and implicit referring in face-to-face and phone conversations between close colleagues

Thus the third study substantiates the hypothesis that implicit referring is used less in phone conversations than when interlocutors are speaking face-to-face.

### 3 Discussion

The results have substantiated the initial hypothesis. Implicit referring is used to infer relations between people, and people who are well acquainted use it more than people who are less well acquainted. Further, implicit referring is used less in phone conversations than in face-to-face conversations. Combined the results suggest that the phone alienates us by changing the way we speak. Granted this interpretation of the results, they give rise to an interesting implication. Some text-based communication technologies, traditionally seen as being low in media richness (Daft & Lengel, 84),

nonetheless support highly affective interpersonal interactions (Rourke et al., 99). On the basis of the present results, it can be argued that the reason is that these text-based communication technologies makes it easy to use implicit referring. In other words, to be an effective vehicle for affective communication the important aspect of a communication technology is not its bandwidth, but its ability to support implicit referring. If this is the case, it ought to be a priority to chart how implicit referring could be supported in mediated communication.

While the results are indicative, they are not conclusive. In future studies we will try to substantiate the results by utilizing an experimental approach. Further we intend to investigate to which degree the results can be generalized to text-based media and to other forms of imprecise speech, for instance equivocal versus unequivocal utterances.

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