

Contents lists available at ScienceDirect

Patient Education and Counseling



journal homepage: www.elsevier.com/locate/pateducou

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Communication study

Facework and uncertain reasoning in health communication

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ARTICLE INFO

Article history: Received 26 April 2010 Received in revised form 1 September 2010 Accepted 1 September 2010

Keywords:

Health communication Uncertain inferences Predictive reasoning Diagnostic reasoning Facework Sociolinguistic

ABSTRACT

Objectives: Health care professionals often need to convey good and bad prospects to patients, and these news can be qualified by various uncertainty terms. Based on a sociolinguistic analysis of the way these uncertainty terms are used, we predicted that they would be interpreted differently by patients as a function of whether they qualified good news or bad news.

Method: Two studies investigating causal inferences were conducted among a sample of French university students (Study 1, N = 50), and among a sample of Italian pregnant women (Study 2, N = 532). *Results:* Participants felt greater confidence in the conclusions they derived when the news were bad, as compared to the conclusions they derived when the news were good.

Conclusion: The findings have implications for health care professionals who communicate good and bad prospects to patients, and who need to qualify the certainty of these prospects.

Practice implications: Professionals should be aware that when the news are bad, any hedging term such as "possible" can be misunderstood as an attempt to sugar-coat the pill, and that this misinterpretation can lead patient to inferences that are not shared by the professional.

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1. Introduction

In the last few decades, patients became increasingly involved in decisions and discussions concerning their health [1–4]. Several studies highlighted the strong influence that physician–patient communication has on patient's satisfaction and compliance (see [5,6]), and one central issue concerns the communication of the uncertainty that surrounds several aspects of health care [7]. Patients, indeed, often have to cope with vague, incomplete, or ambiguous information when they have to assess their situation and prospects. To enhance the effectiveness of physician–patient communication, and in particular to avoid unfortunate misunderstandings, it is thus necessary to understand how patients interpret and manipulate uncertain information when they make inferences about their situation and prospects.

We believe that a sociolinguistic force known as facework is likely to complicate heath care communication about uncertainty. Health care professionals often find themselves in need of conveying bad news to patients, or in need of asking patients to consider unpleasant prospects. In daily life, communicating upsetting news or asking people to consider upsetting possibilities is not done bluntly, but commonly requires facework. Face is the sense of positive identity and public self-esteem that all human agents project, and are motivated to support, in social interactions [8–9]. Many actions, called face-threatening acts, can induce a loss of face for the speaker or for the listener (e.g., apologizing, criticizing, announcing bad news). Bringing of bad news about the listener, in particular, is construed by facework theorists as a face-threatening act, because it can indicate that the speaker is willing to cause distress to the listener, or that the speaker does not care about the listener's feelings [8]. Performing such an action requires the use of facework, typically in the form of a linguistic strategy that mitigates the threat.

One common facework strategy consists of being less assertive than one could. For example, instead of bluntly asserting (1-a), one might tactfully hedge her assertion as in (1-b):

- a. Your pain is going to increase.
 - b. Your pain is possibly going to increase.

Individuals are sensitive to the fact that speakers may hedge their statements for facework purposes. When they interpret a statement such as (1-b), they show a tendency to interpret the use of "possibly" or other quantifiers, not as a authentic mark of uncertainty, but rather as an attempt at being gentle [10,11]. As a consequence, they tend to attribute higher certainty to bad news qualified as "possible", compared to similarly qualified good news.

In the context of health communication, [11] showed that the subjective likelihood of bad prospects qualified as "possible" was inflated precisely when individuals felt that the doctor was deploying facework, and not otherwise. In other terms, individuals who thought that the use of "possible" was a facework strategy also

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^{0738-3991/\$ -} see front matter © 2010 Elsevier Ireland Ltd. All rights reserved. doi:10.1016/j.pec.2010.09.005

thought that the prospect was very likely; but individuals who did not think that the use of "possible" was a facework strategy did not perceive the prospect as especially likely. Building on this result, we can expect that patients may attach greater confidence to causal inferences that involve bad news, as compared to causal inferences that involve good news. Compare indeed (2), which involves good news, with (3), which involves bad news:

- (2) a. If your pain decreases, you will change therapy
 - b. It is possible that your pain will decrease
- (3) a. If your pain increases, you will change therapyb. It is possible that your pain will increase

What will be a patient's confidence in the predictive inference that she will change therapy? In situation (2), we should expect the standard phenomenon of verbal uncertainty propagation [12,13], concluding that she will "possibly" change therapy. In contrast, in situation (3), previous research suggests that the patient may construe the phrase "possible" as a facework marker rather than a genuine uncertainty marker; and accordingly conclude that she is "probably" or even "certainly" going to change therapy.

This prediction will be tested in two studies, once with a convenience sample of students (Study 1), and once with a more specific sample of pregnant women (Study 2). Study 2 will also investigate diagnostic inferences, in addition to predictive inferences¹ [14]. Indeed, facework might also influence diagnostic causal inferences, albeit in a slightly different fashion. Compare in that regard (4), which involves good news, and (5), which involves bad news:

(4) a. If your pain decreases, you will change therapy
b. It is possible that you will change therapy
(5) a. If your pain increases, you will change therapy
b. It is possible that you will change therapy

Facework considerations are irrelevant for (4), and we should thus expect standard propagation of verbal uncertainty: Pain will "possibly" decrease. In contrast, facework considerations are relevant to (5), although they involve indirectness rather than hedging. That is, although changing therapy is not in itself bad news, and thus does not call for gentle hedging, a medical professional asserting both (5-a) and (5-b) might be perceived as beating around the bush, so to say; that is, as indirectly (and tactfully) pointing to the upsetting prospect of increased pain. Previous research repeatedly showed that when an assertion has an indirect, threatening interpretation, individuals are likely to consider that the threatening meaning was indeed the one intended by the speaker; and that the speaker used indirectness as a facework strategy [15-18]. Accordingly, a patient may conclude from (5-a-b) that her pain will "probably" or even "certainly" increase. This prediction will be tested in Study2.

2. Study 1

2.1. Method

Study 1 involved a convenience sample of 50 students (19 males, mean age 25, SD = 7.8) at the University of Toulouse, who

were individually recruited on campus by a research assistant who was blind to the purpose of the experiment. Each participant read three versions of two medical scenarios, each of which featured a causal rule and a remark made by a doctor. The three versions of each scenario were the good news version, the bad news version, and the filler, neutral version.

The six scenarios were presented in a random order for half participants, and in the opposite order for the other half. See Appendix A for instructions and experimental materials.

To illustrate the materials, we show below the good news version of the pain scenario:

"While talking to his doctor during a visit, Christian is informed that if his pain increases, he will change therapy. His doctor remarks that it is possible that his pain increases."

Participants were asked to rate their degree of confidence in the (predictive) causal conclusion of the scenario, here: Christian will change therapy. They rated this confidence on a 5-point scale, where 1 was labelled certainly false, 2 was labelled improbable, 3 was labelled possible, 4 was labelled probable, and 5 was labelled certainly true. The experiment was conducted in French.

2.2. Results

Table 1 reports means, and standard deviations in the two experimental conditions of Study 1.

Both in the good news and in the bad news version, the modal response was, as per previous research, to simply propagate verbal uncertainty alongside the causal inference, and to select the "possible" response (46% of responses overall). As expected, though, a within-subject ANOVA on mean responses detected that the average degree of confidence was greater for bad news versions of the scenarios (M = 3.6, SD = .8) than for good news version (M = 3.2, SD = .8), F(1,49) = 12.7, p = .001, $\eta_p^2 = .21$.

3. Study 2

Study 2 provides a replication of Study 1, and extends our investigation to diagnostic inferences. In order to rule out possible demand effects due to the use of a within-subject design in Study 1, Study 2 uses a full between-subject design. Furthermore, where Study 1 involved a convenience sample of students, Study 2 involves a sample that is ecologically more interesting, that is, a sample of pregnant women. For obvious reasons, pregnant women are highly motivated to grasp as much health-related information as possible from physician-patient communication. They thus constitute an ideal population to investigate subtle communication effects as that of facework.

3.1. Method

Study 2 involved 532 pregnant women, users of an Italian web site dedicated to pregnancy and babies. An e-mail notification advertising the opportunity to take part in a research on risk communication was sent to 50,000 registered users of an Italian web site specialized in pregnancy and babies, www.gravidanzaonline.it. Our questionnaire was addressed to pregnant women

Table 1

Means, and standard deviations in Study 1.

	Mean	SD
Good news	3.2	.8
Bad news	3.6	.8

¹ Whereas *predictive* inferences go from cause to effect, *diagnostic* inferences go from effect to cause (note that the term "diagnostic" here generally denotes an inference from an effect to its cause, and not specifically the medical process of identifying a disease from its signs and symptoms). In predictive reasoning, the likelihood of an effect is inferred from the known likelihood of its cause (as in examples 2, and 3). In contrast, in diagnostic reasoning, the likelihood of a cause is inferred from the known likelihood of its effect (as in examples 4, and 5).

Table 2Means, and SD in Study 2.

		Mean	SD
Prediction	Good news	3.4	.7
	Bad news	3.6	.7
Diagnosis	Good news	3.4	.6
	Bad news	3.6	.6

only. Pregnant women tend to register to informative websites during the early months of their pregnancy, and they frequently keep their registrations later on, also after the child's birth. It is then not possible to calculate the exact response rate in our on-line research given that the number of registered users that were pregnant at the moment of the study is unknown. Participants (mean age 33, SD = 4.9) volunteered to take the questionnaire on-line for free.

Participants were randomly assigned to one group of a 2×2 between-subject design, manipulating the valence of the scenario (good news vs. bad news) and the inference direction (prediction vs. diagnosis). Participants read the same medical scenarios used in Study 1, and used the same response scale (see Appendix B). The two scenarios were introduced in random order for each participant.

3.2. Results

Table 2 reports means, and standard deviations of the four experimental conditions of Study 2. The valence of the news, as well as the direction of the inference, were entered as predictors in an ANOVA predicting confidence ratings. The only statistically significant effect was that of the valence of the news, F(1,528) = 14.9, p < .001, $\eta_p^2 = 0.03$. The effect of direction of the inference and the interaction effect between the two factors resulted to be not statistically significant, respectively F(1,528) = 0.14, p = .7, $\eta_p^2 = 0.000$, and F(1,528) = 0.01, p = .9, $\eta_p^2 = 0.000$. Ratings were on average higher in the bad news condition (M = 3.6, SD = .7) than in the good news condition (M = 3.4, SD = .6), for predictive as well as for diagnostic inferences.²

4. Discussion and conclusion

4.1. Discussion

Health care professionals frequently need to communicate bad news to patients, or to ask them to consider unpleasant prospects. Because healthcare communication is frequently characterized by uncertainty, these bad news or prospects can be qualified by various uncertainty terms. This research adopted a sociolinguistic approach to the inferences that patient may derive from this communicated uncertainty, and built on previous findings to suggest that facework considerations may lead patients to feel greater confidence in the conclusions they derive when the news are bad, as compared to the conclusions they derive when the news are good.

4.2. Conclusion

In Study 1, students were presented with good news and bad news scenarios, and asked to make causal inferences from a prospect qualified as "possible", for example:

- (6) a. If the pain decreases, the patient will change therapyb. It is possible that the pain decreasesc. Will the patient change therapy?
- (7) a. If the pain increases, the patient will change therapyb. It is possible that the pain increases
 - c. Will the patient change therapy?

Results showed that participants felt greater confidence in conclusion (7-c) than in conclusion (6-c), and were more likely to qualify it as probable, or even certainly true. This result was replicated in Study 2 among a sample of pregnant women, and extended to diagnostic causal inferences.

4.3. Practical implications

These findings have implications for health care professionals who are routinely led to communicate good and bad prospects to patients, and who need to qualify the certainty of these prospects. Previous research has amply emphasized the need for guality physician-patient communication [19–20], especially when this communication involves uncertain prospects, which can be a cause of anxiety for patients [21]. For this reason, health care professionals should be particularly alert about how patients interpret and reason from uncertain information. Previous research [11] showed that uncertainty terms such as "possible", when applied to bad news, can be interpreted as a way for the doctor to sugar-coat the pill, rather than to express genuine uncertainty. The present research showed that this interpretation can propagate to inferences made by the patients about their situation, and lead them to overestimate the probability of various conclusions they derive from the information communicated by the professional. This tendency can result in suboptimal communication between physicians and patients, due to a discrepancy between the conclusions they reach and the information that is communicated.

Although the patient-centered approach resulted in a more egalitarian relationship between doctors and patients, the balance between their relative contributions is still precarious, because of their different roles, language, expectations and perspectives [22]. The present research provides a novel illustration of the challenges of optimal health communication, and suggests that health professionals should take account of patient's sociolinguistic expectations involved in conversational dynamics. They should be aware in particular that when the news are bad, any hedging term such as "possible" can be misunderstood by patients as a mere facework marker, rather than as a genuine uncertainty marker; and that this misinterpretation can lead them to inferences that are not shared by the professional. The prescriptive message for health professionals here is to try to eschew any form of vagueness which could be read by patients as either hedging or indirectness, mainly when health professionals communicate bad news, and to routinely check for patient's understanding in order to avoid a mismatch between their communication and patient's inferences.

Acknowledgement

This research was supported by grant ANR-07-JCJC-0065-01.

² Thirty-six participants indicated that they were not Italian. The same analysis were conducted on a reduced sample of 496 pregnant women, omitting not Italian participants. Results showed no differences compared to the total sample. A 2 × 2 ANOVA showed a significant main effect of the valence of the news, *F*(1,492) = 11.6, p = .001, $\eta_p^2 = 0.02$, no significant main effect of the inference direction, *F*(1,492) = 0.28, p = .6, $\eta_p^2 = 0.001$, and no significant interaction between the two factors, *F*(1,492) = .00, p = .9, $\eta_p^2 < 0.001$.

Appendix A. Instructions and material, Study 1

1. General instructions

We are going to show you six short stories where a doctor announces something to a patient. After each story, we suggest a conclusion which could be drawn from the doctor's remark. Your task is to judge to which extent this conclusion seems certain to you. This is not a test, there are no correct or incorrect answers. We are interested in your personal judgment. Thank you for your collaboration.

2. Experimental material

The words between square brackets were used for the bad news versions and the filler version, respectively.

Scenario 1: While talking to his doctor during a visit, Christian is informed that if pain decreases [increases/the orthopedic has some advice], he will change therapy. The doctor remarks that: 'It is possible that the pain decreases [increases/the orthopedic has some advice].' Conclusion: Christian will change therapy.

Scenario 2: While talking to his doctor during a visit, Bruno is informed that if the disease is mild [severe/the specialist is in], he will get an appointment in two days. The doctor remarks that: 'It is possible that the disease is mild [severe/the specialist is in].' Conclusion: Bruno will get an appointment in two days.

Appendix B. Instructions and material, Study 2

1. Experimental material

The words between square brackets were used for the bad news version.

Prediction, Scenario 1: While talking to his doctor during a visit, Christian is informed that if pain decreases [increases], he will change therapy. The doctor remarks that: 'It is possible that the pain decreases [increases].' Conclusion: Christian will change therapy.

Prediction, Scenario 2: While talking to his doctor during a visit, Bruno is informed that if the disease is mild [severe], he will get an appointment in two days. The doctor remarks that: 'It is possible that the disease is mild [severe].' Conclusion: Bruno will get an appointment in two days.

Diagnosis, Scenario 1: While talking to his doctor during a visit, Christian is informed that if pain decreases [increases], he will change therapy. The doctor remarks that: 'It is possible that you will change therapy.' Conclusion: The pain decreases [increases].

Diagnosis, Scenario 2: While talking to his doctor during a visit, Bruno is informed that if the disease is mild [severe], he will get an appointment in two days. The doctor remarks that: Doctor's remark: 'It is possible that you will get an appointment in two days'. Conclusion: The disease is mild [severe].

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