To what extent do politeness expectations shape risk perception? Even numerical probabilities are under their spell!

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ABSTRACT

Politeness theory posits that uncertainty quantifiers can be interpreted as hedging strategies and thus be perceived as communicating greater certainty than when they are interpreted as likelihood-communication devices. This has only been tested with verbal probabilities (e.g., it is possible). The present paper aims to test whether numerical probabilities can also be interpreted as face-management devices and to investigate the effect of such an interpretation on risk perception. Four experiments focused on the effect of interpretations of numerical probabilities in negative outcome predictions on risk perception (e.g., there is a 50% probability that your stocks will lose their value). Politeness expectation was manipulated by the personality of the speaker (i.e., blunt vs. tactful, Experiments 1 and 2) and according to the conversational partners' need for politeness (Experiments 3 and 4). Results show that numerical probabilities, like verbal ones, were interpreted as likelihood-communication or face-management devices and that the two interpretations led to different risk perceptions. Findings were replicated with different formats, such as percentage (e.g., 50%) and chance ratio (e.g., 1 chance in 3) and with different degrees of certainty (e.g., .30, .50 and .70). Theoretical and practical implications relevant to risk communication are presented and discussed.

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1. Introduction

Traditionally, verbal probabilities (e.g., it is possible, there is a small probability) have been considered as vague likelihood-communication devices. Yet, in agreement with politeness theory (Brown & Levinson, 1987), evidence suggests that verbal probabilities are often perceived as face-management devices, providing optimistic and vague bad news to a conversational partner instead of a plain and accurate forecast (Bonnefon, Feeney, & De Neys, 2011; Bonnefon & Villejoubert, 2006; Juanchich & Sirota, submitted for publication; Juanchich, Sirota, & Butler, 2012; Pighin & Bonnefon, 2011). The present paper aims to examine whether the pragmatic use of verbal probabilities as face-management devices is limited to linguistic risk material or can be extended to numerical probabilities.

1.1. Politeness theory

Politeness theory posits that all humans need to protect and promote both a positive sense of self and freedom of action (Brown & Levinson,

1987). Moreover, the theory suggests that communication acts damaging these needs are felt to be a threat that can be diminished by the use of *face-management* strategies. For example, asking for a service may require such a strategy because the request poses a threat to the service provider's future freedom of action. Giving bad news is considered a threat for hearers because it damages their emotional integrity (e.g., creating distress). Introducing uncertainty is a face-management strategy. For example, a criticism can be signified by tactfully saying "*I am not sure I follow you*", instead of by blatantly saying "You are not clear".

1.2. Face-management and risk quantification

A number of findings show that verbal probabilities can be perceived and used as face-management devices through providing a risk assessment adjusted towards the hearer's preferences. For example, when asked to give bad news, speakers tactfully preferred to say "It is evenly probable that your stock will lose its value" whereas they knew this outcome was likely (Juanchich & Sirota, submitted for publication). Used as an optimistic face-management device, verbal probabilities therefore aim to both communicate a degree of certainty and to soften threat. Risk communicated can be adjusted upwards or downwards as a function of the valence of the outcome. Indeed, in negative outcome predictions, tactful speakers downwardly adjust the risk level, whereas, in positive predictions, speakers are expected

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to adjust the probability they communicate upwards so as to improve the hearer's prospects (Juanchich et al., 2012).

In addition to optimistic situation assessment, politeness theory suggests that tactful speakers can pretend to be uncertain to enable hearers to save face (Bonnefon & Villejoubert, 2006, Brown & Levinson, 1987). For example, tactful speakers would prefer to hedge "[I am sure] you made a mistake here" by saying "maybe you made a mistake here". Hedging appears as an extreme case of optimistic assessment, where speakers provide an adjusted degree of certainty in which the starting point is certainty. Hedging therefore implies that the face-management function of verbal probabilities could be completely separated from their likelihood-communication function.

Erev and Cohen (1990) suggest similar considerations about verbal probabilities with their "cover hypothesis". The hypothesis posits that people use verbal probabilities to "cover" themselves and avoid taking the responsibility of an accurate (numerical) estimate (e.g., saying "it is possible" instead of "there is 1 chance in 2"). The optimistic use of verbal probabilities and the cover hypothesis differ in that the optimistic assessment strategy is used to protect the recipient (from a ruthless truth) whereas the cover hypothesis postulates a preference for verbal formatting fuelled by self-serving considerations. Moreover, in contrast to hedging or optimistic assessment, the cover use of verbal probabilities does not imply the communication of a different probability, but simply the translation of an accurate belief into a vague format.

1.3. Effect of face-management interpretations

When receiving a prediction (e.g., it is possible that your stocks will lose their value), it is not uncommon for speakers to interpret the verbal probability as a tool intended to soften the threat of bad news (i.e., either hedging or optimistic) instead of as a simple likelihood-communication device. In a negative outcome risk communication, hearers who interpret verbal probabilities as face-management devices perceive a greater risk that the negative outcome will occur. For example, a patient who is told that "it is possible that you will be deaf" may either understand that the general practitioner is conveying a 50% probability or that she is tactfully trying to make a more likely prognosis of deafness (Bonnefon & Villejoubert, 2006; Juanchich et al., 2012). The interpretation of the risk quantifiers' function is not only influencing risk perception but also the severity of the situation and the decision-making of the recipient. For example, when a speaker who said "Possibly, the stocks you bought will lose their value" was believed to be using a face-management strategy, people perceived financial loss to be more likely, the situation to be more severe (Experiment 3), and were then more likely to sell the stocks in question (Experiment 4; Juanchich et al., 2012).

1.4. The danger of politeness risk miscommunication

As described above, in order to comply with social needs and satisfy politeness expectations, people do not directly express their degree of certainty and hearers apply a risk perception adjustment based on the supposed intention of speakers (Bonnefon & Villejoubert, 2006; Juanchich & Sirota, submitted for publication; Juanchich et al., 2012). Therefore, risk communication can give rise to many miscommunication issues. The danger of miscommunication lies in wrongful interpretation of the speaker's goal, and thus in the difference between risk perceived from a likelihood-communication interpretation and from a face-management interpretation (Bonnefon, Feeney & De Neys, 2011; Juanchich & Sirota, submitted for publication; Juanchich et al., 2012). For example, a doctor could announce to two patients "it is possible that you have cancer" and one patient might leave thinking of the possibility of cancer whereas the other will leave with the certainty of cancer. The danger of risk misperception is made especially salient by the lack of consensus on the interpretation to give to a verbal forecast which focuses on a negative outcome. For example, when told "it is possible that you will be deaf", around 40% of people believed that the

speaker gave a plain uncertainty, whereas 60% believed that the speaker aimed to tactfully communicate a likely prognosis (Bonnefon & Villejoubert, 2006). Results of Juanchich et al. (2012) showed a similarly low level of agreement. Finally, Juanchich and Sirota (submitted for publication) showed that a similar low level of consistency applies to the speakers. They found that when asked to describe a possible investment loss, around half of the participants used verbal probabilities to plainly communicate likelihood whereas the other half had a face-management objective.

So far, the discrepancy of risk perception created by face-management and likelihood-communication interpretations has been assumed to be triggered by linguistic expressions only. Indeed, investigations conducted to broaden our understanding of the process has focused only on linguistic materials, such as verbal probabilities or general quantifiers like *some*, *all* and *few* (Bonnefon, Feeney, & Villejoubert, 2009). This assumption is implicitly supported by the fact that Brown and Levinson (1987) did not use numbers to illustrate hedging or optimism strategies, but rather linguistic expressions in the form of adverbs (e.g., maybe) or verbs (e.g., I think). The focus on linguistic material often concurs with a belief that numerical probability is a more suitable format for risk communication, because it is supposed to be more accurate and to leave less room for subjective interpretation (e.g., Bonnefon & Villejoubert, 2006). This view is supported by findings indicating that verbal probabilities have more "pragmatic power" than numbers. For example, whereas verbal probabilities direct attention unambiguously either toward the occurrence or the non-occurrence of an outcome (e.g., there is a chance vs. it is not certain), numerical probabilities are not interpreted with such a consensus (Teigen & Brun, 1995; Teigen & Brun, 2000). Windschitl and Wells (1996) even formally hypothesized that verbal probabilities elicit an intuitive mode of information processing, making them more sensitive to contextual influence, whereas numerical probabilities elicit a more rule based approach, reducing, or even removing, sensitivity to contextual influence. For example, the authors showed that people were sensitive to the number of possible alternative outcomes when providing their responses on a verbal probability scale but not when providing their responses on a numerical probability scale.

1.5. Are numerical probabilities used as face-management devices?

So far, there is very little evidence that numerical risk quantifiers do not perform face-management functions. On the contrary, previous research has shown that numerical probabilities could elicit or be applied to a range of likelihoods as a function of contextual factors such as base rate, representativeness or severity (Windschitl & Weber, 1999). Numerical probabilities are, for example, sensitive to the representativeness of an outcome. As a result, a 30% chance of snow in December conveys a higher degree of certainty than a 30% chance of snow in November (Windschitl & Weber, 1999). Moreover, Pighin, Bonnefon, and Savadori (2011) showed in a recent study that outcome severity affected the subjective interpretation of a numerical probability. In their study, pregnant women perceived that a fictitious pregnant woman had a greater risk of having her child affected by Down syndrome than by insomnia, although these two medical conditions were both described as having a 1 in 28 chance of occurring. It is worth noting that although findings suggest that numbers are sensitive to contextual factors, studies comparing the context effect on both verbal and numerical probabilities have shown that numbers are less sensitive to contextual factors than verbal probabilities (Piercey, 2009). For example, when participants were encouraged to make an optimistic risk assessment in an accounting context, they provided more optimistic assessments with verbal probabilities than with numerical ones (Piercey, 2009).

Based on the body of evidence concerning the contextual sensitivity of numerical probabilities, we propose that numerical probabilities can be influenced by politeness expectations, yet less so than verbal probabilities. Specifically, numerical probabilities qualifying negative outcomes