

## Effect of internal and external uncertainties in judgments and decision making.

Uncertainty is more than a probability on a scale and thus predictions could convey implicit meanings. We suggest that speakers communicate the source of their uncertainty by framing their prediction with either a personal mode “I am uncertain that the team will win” or with an impersonal mode “It is uncertain that the team will win”. We found that participants judged impersonal prediction more informative, more based on statistical information than personal prediction. In addition participants were more willing to bet according to impersonal prediction. The present research focuses on how uncertainties are communicated, understood and used. From a mathematical point of view, uncertainty can be described by numerical probabilities: numbers ranging from 0 (impossible) to 1.0 (full certainty). Yet uncertainty cannot be reduced to a point on an axis and can be characterized as well by its source. Indeed uncertainty could be deemed from lack of knowledge (i.e., ignorance) or from the character of events themselves (i.e., disposition of the world). As numerical probabilities, quantifiers of the natural language (e.g., there is a chance, it is almost certain) can convey different ranges of uncertainty. We suggest that these terms could reflect the source of uncertainty by the mean of the pronoun used to describe the uncertain state. For example one can say “I am uncertain” reflecting an internal uncertainty, whereas someone else can prefer “it is uncertain”, reflecting an uncertainty attributed to the world. We conducted experiments intending to explore how the personal and the impersonal modes of predictions (I am uncertain vs., It is uncertain) are perceived by the recipient and influence its subsequent decision making in football game prediction contexts.

In the first experience 246 participants, non expert of soccer cup, read a prediction about a match outcome and then judged its informativeness, the degree and kind of knowledge of the speaker, the attitude of the speaker towards the team and finally, their own willingness to bet. In a mixed design, the degree of certainty of the prediction was a within-subject factor (low, mild vs. high probability of occurrence) and the mode of prediction (personal vs. impersonal) was a between subject factor. Results indicated that external predictions were judged more based on statistics, more informative and would be more used in case of betting. In the second experiment we manipulated in addition the expertise of the source of the speaker and broaden the set of questions about the prediction (degree of correctness if the event happen, degree of encouragement) and on the speaker (i.e., to what extent the speaker based the prediction on intuition). Results showed that the mode of prediction (i.e., I am uncertain vs. It is uncertain) interacts with the degree of expertise of the speaker to determine the inference made about the prediction and about the speaker. Indeed, experts were judged more convincing when they were using internal prediction whereas laypeople were judged more convincing when they were using internal prediction.

The source of certainty manipulated by the mean of the personal pronoun influences the inference drawn by the hearer on the speaker’s knowledge and consequently was found to influence subsequent decision making. These results show the need to take into account different dimensions of uncertainty, such as the attribution of its source, and to not consider uncertainty along the single probability frequentistically based dimension.