

Strategies for Evaluating Opinions: A Cross-Cultural Study

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Abstract

This paper aims at checking the cross-cultural validity of well-known findings concerning the way people integrate communicated information. In a first experiment, a Japanese and a French population weighted the advices they were given in similar ways. In a second experiment, both populations showed some evidence of bias towards their own answer relative to an advice. In both experiments, participants were more prone to choose one of the possible answers than to average over them. By replicating what had been previously found only in Western populations, these findings contradict some cross-cultural predictions.

Introduction

Should you take your umbrella when leaving for work this morning? The weather forecast is good, but these clouds look quite menacing. Should you sell your shares in TransGear Inc.? Some experts say they will rise, but others predict a sudden drop. In everyday life we often have to rely, at least in part, on the opinions of other people. However, more often than not, these opinions are not in full agreement with each other. They may even openly clash, or they can contradict something you already thought. To deal with all these cases, we must be able to assess the value of the different pieces of information at our disposal, perhaps to reject some of them, before making our decisions.

This paper will focus on the cases in which only two opinions are involved. They can either both come from some other people and pertain to a matter that we have no knowledge of; or an opinion can be given by someone else and be compared to our own. Broadly construed, this kind of phenomena has been extensively studied by social

psychologists, under the headings of persuasion and attitude change. Here we will restrain the investigations to simple instantiations of these categories, using numerical estimates and giving only limited cues that might allow differentiating the value of the different opinions. Numerical estimates allow a precise evaluation of the way the various opinions involved are taken into account in establishing a final estimate.

Mechanisms used in evaluating opinions

Several mechanisms designed to deal with these situations have been proposed. The first is the weighting heuristic (Yaniv, 1997). It is used when the quantitative estimates given are accompanied by a range of certainty. For example, one might predict that the chances that it rains tomorrow are of 50%, and give a range of 40 to 60%. Since it has been observed that confidence is correlated with accuracy (see Yaniv, Yates, & Smith, 1991), it is possible to use the size of the interval as a clue to the accuracy of the estimate. This is what the weighting heuristic does: it weights the different estimates by the relative size of the related interval: the wider the interval of an estimate, the smaller its weight. Other mechanisms are involved when one's own opinion is involved in the process. In this case, the more robust finding is the self-other effect: it is a general bias to discount the other person's opinion and to stick with one's initial estimate (Harvey & Fischer, 1997; Lim & O'Connor, 1995; Yaniv, 2004; Yaniv & Kleinberger, 2000); see also (Mercier & Van der Henst, 2005). For a personal estimate of 0, and a communicated estimate of 100, the average final estimate will be around 30. This bias seems to depend on the distance separating one's original opinion from the one that is

communicated: as the distance increases, the discounting of the other's opinion also increases; this has been dubbed the distance effect (Yaniv, 2004).

In a reanalysis of the literature on the topic, Soll and Larrick, (submitted) claim that the classic way to look at these effects is misleading. Averaging the results of all the subjects gives the idea that most people provide a final estimate at around one third of the distance between their original estimate and the one that was given by someone else. However, the individual data indicates that only a few people actually apply this strategy: most people either choose frankly to go for one of the estimates – the choosing strategy – or just average between the two – averaging strategy. In their paper, Soll and Larrick discuss the two strategies and argue that the use of the averaging strategy is generally the most normative/rational one. They conclude that people use the choosing strategy too often.

Cross-cultural considerations

The weighting heuristic, the self-other effect and the preference for the choosing strategy seem to be quite robust results. However a major concern could be raised regarding these studies: all of them were conducted with Western type populations. Would we observe the same effects in populations with a widely different cultural setting? Over the past few years experimental cross-cultural psychology has made very surprising discoveries showing differences in the way even very basic cognitive mechanisms, such as perception, are put to work by various populations (Lehman, Chiu, & Schaller, 2004; Nisbett & Miyamoto, 2005; Nisbett, Peng, Choi, & Norenzayan, 2001). The most studied contrast, between Easterners and Westerners, is fully relevant here: the cross-psychological literature can give us plenty of reasons to expect discrepancies between these two populations on the topic at hand.

The points where the greatest differences could be predicted are the preference for choosing instead of averaging and the self-other effect. In the former case, a wealth of literature in anthropology, sociology, history and now in experimental psychology stresses the importance for Easterners of finding a "middle way" (Lloyd, 1990; Nakamura, 1964/1985). To give a taste of the experimental evidence, in the study 3 of Peng and Nisbett (1999) participants were presented with a scenario in which two persons were in conflict. Chinese participants were inclined to find a "middle way" by taking into account both opinions in their judgment when American participants tended to side decidedly with one of the characters (see also Briley, Morris, & Simonson, 2000). In the present context, it might be predicted that Easterners would be more prone to use the averaging strategy than Westerners. This tendency to look for a "middle way" could also bear on the self-other effect, in which case a decrease in its strength could be predicted among Easterners. A lessening (or even a reversal) of this effect could also be expected on the grounds that Easterners tend to be more collectivistic than Westerners, and so

should take the other's opinion more into account¹ (e.g. Triandis & Suh, 2002) but see (Oyserman, Coon, & Kemmelmeier, 2002). Peng and Nisbett (1999) also argued that Easterners are not so put out by contradiction as Westerners are. It is thus possible that Easterners do not see the opinion of the other as clearly contradicting their own, even if they are far apart. That would lead to an attenuation of the distance effect.

If it is possible to predict some cross-cultural variation, one might also find it justified to stick with the standard stance of cognitive psychology and favor a more universalist view. The weighting heuristic is a highly valuable tool that yields good results in a broad range of situations, thus it has good reasons to be widely shared (Yaniv, 1997). The self-other effect may have a sound evolutionary rationale, and the product of an adaptation present everywhere (Mercier & Van der Henst, 2005). We don't have the space here to evaluate the strength and the precise predictions of the classic and the cross-cultural views: the point is that it would be premature to count on the universality of all the mechanisms previously found only among Western populations before some cross-cultural studies have been performed. The present study is to be thought of as a first step in this direction. Since we don't make fine cross-cultural predictions, it is possible to take two populations that may not be the 'purest' instances of the Western and Eastern cultural types: Japanese and French. The first experiment that we carried out aimed to measure the effect of the weighting heuristic alone. This experiment is a necessary prerequisite before studying the self-other effect since if any difference is to be found in the way Japanese and French people apply the weighting heuristic, it might then be used to explain away any difference observed in the strength of the self-other effect. Moreover and as already stated, the purported preference for the 'middle way' among Easterners might lead one to expect a different distribution of the answers, with more Japanese people using the averaging strategy and less the choosing strategy.

Experiment 1

Method

The aim of this first experiment is to check that the two populations under study use the weighting heuristic in a similar way. To do so, we used an experimental paradigm close to that of Yaniv (1997). Participants were given booklets with instructions and questions. The instruction went as follows^{2,3}:

In this experiment, you will have to imagine that you are traveling in a foreign country. You have very limited knowledge of this country, and you would like to know more

¹ Insofar as this other is construed as belonging to the in-group.

² All the excerpts from the material are translated from French.

³ A note on the translations from French to Japanese: all the materials were first written in French, then translated into Japanese, and then back-translated into French. All discrepancies were resolved and the texts were checked again.

about its history. To do so, you ask French [Japanese] people who have lived in this country for quite a long time to answer your questions. Below you will find the answers of these different persons to your questions. These answers are two dates between which the person who answered thinks the event happened. Here is an example:

The question you have asked: In what year did event X happen?

The answers you obtained:

Person 1: 1896-1904

Person 2: 1920-1960

Depending on the questions, the number of answers can be different. Your task will be to try to estimate the date in which you think the event happened by taking into account the different answers that were given. You will have to provide a precise answer and two dates between which you think the event happened.

Fifteen sets comprising a question and its answers were included in each booklet. Each question was related to a different event (event A to O). Twelve of these questions were used to study different mechanisms, and we won't use them here⁴. The three relevant questions had two person answering them and the answers were designed so that one of them would be precise (interval width: 8 years) and the other imprecise (interval width: 40 years). The midpoints of the two intervals were 40 years apart, and they were scattered in the last two centuries among the three questions. So for example, one of the informants could answer '1896-1904' (precise answer), and the other '1920-1960' (imprecise answer). For them not to be confounded with the actual answer of the participant, the answers given to the participants will be called 'advice' thereafter.

The experiment was run in classrooms with undergraduates in business and economic science (Japan, N=122; France, N=123)⁵.

Results and discussion

In order to know whether participants are effectively using a weighting heuristic we have to compute the answers predicted by that heuristic, and see if it gives a better account of the subjects' results than the default strategy of simply averaging between the given advices⁶. As defined by Yaniv (1997) the weighting heuristic assigns weight inversely related to interval width so that the result is drawn towards the more precise answers (the result is the center of mass of the weighted answers). Once we have the results predicted by the weighting heuristic and by simple averaging, we calculate the normalized error to evaluate the fit between the prediction and the participant's answer. The

⁴ Thus they can be considered here as fillers preventing subjects from establishing a simple answering strategy.

⁵ In both experiments the only results kept were those of participants that were of Japanese (French) nationality and who had Japanese (French) as their mother tongue.

⁶ The results predicted by averaging and by weighting are computed using the midpoints of each of the two intervals given to the participant.

normalized error is $|a - p|/w$ where a is the answer of the participant, p is the answer predicted by the strategy whose fit we wish to measure, and w is the width of the participant's answer; By taking the width into account, this measure allows us to pool the data from all the questions together (see Yaniv, 1997). In both populations, the fit of the weighting heuristic was superior to that of averaging: 0.64 for weighting and 0.81 for averaging in Japan, 0.77 for weighting and 1.11 for averaging in France (small numbers indicate a better fit). Both differences are statistically significant using paired t tests (Japan: $t(121)=3.66, p<0.005$; France: $t(122)=3.04, p<0.005$). The overall strength of the weighting heuristic can be assessed by computing the deviation from the answer predicted by averaging towards the more precise advice. As an example, using the two advices given above, averaging yields 1920, and we can see how much the participants' answers deviate from that towards 1900 (the midpoint of the precise advice). The average of this deviation is 3.6 years for the Japanese population and 4.0 years for the French population (the difference is non significant: $t(243)=0.42, p=0.67$).

Having established that both populations use some kind of weighting heuristic, we can try to see if they differ in some ways. We have seen that there is no qualitative difference in the strength of the effects of the weighting heuristic. However, it is still possible that this result is obtained despite a difference in the underlying distribution of the answers. To check for this, we divided the range of the answers (between the midpoints of the two advices, thus encompassing the vast majority of the answers) into 5 intervals of equal length, and the frequency of the answers falling into each of these intervals was calculated. The first and the fifth categories represent the choosing strategy, since they imply taking nearly only one of the answers into account, and the middle category represents the averaging strategy. The results (cf. Table 1) show nearly identical distributions among the two populations. Looking at the table it could be argued that instead of a weighting strategy, participants in both populations tend to use a choosing strategy. However, the conflict is not necessary: the answer that fall into the 'choosing' category may also be conceived of as reflecting the use of a weighting strategy in which the weight awarded to the more precise answer is very high. Both populations thus seem to use the weighting heuristic, and to do it in very similar ways. That being established we can go on to study the self-other effect in the second experiment.

Table 1: Distribution of the answers in experiment 1

Part	1	2	3	4	5
Japan	36.2%	23.9%	12.2%	16.9%	10.8%
France	37.9%	23.0%	17.0%	16.7%	5.4%

Experiment 2

Method

The aim of this second experiment is to evaluate the way people take another person's opinion into account. Its principle is similar to that of Yaniv's first experiment (2004): participants have to estimate the date of an historical event and are given the answer of a supposedly equally qualified person and can then give a new estimate. It was thus necessary to choose a set of events that both populations would have heard of but, because a difference between the participant's first answer and the advice⁷ is necessary here, most of the participants should not be able to give the exact date. Once a pilot study established that our set of event respected these basic criteria, it was used in the gathering phase. The aim of this phase was to gather the data that would be used during the experiment proper to give advice to the participants.

The gathering phase was run in classrooms. After participants were asked if they agreed to take part in the experiment, they were distributed booklets with the instructions and the set of 15 dates they had to estimate. There were two tasks: for each event, participants had to give a precise answer and an interval in which they were sure at 95% that the event took place. Here is an example of a question with the format of answer:

In what year was the UN (United Nations) created?

Precise answer: _____

Dates between which you are sure at 95% that the answer falls: _____ - _____

The participants of this gathering phase were undergraduates in human sciences, mainly majoring in psychology (Japan, N=43; France, N=37).

The results of the gathering phase yielded an ecologically sound set of answers. In order to incorporate these results in the material of the experiment, the extreme answers were rejected: when the precise answer to a question was more than two standard deviations away from the correct answer, it was not further used. Booklets containing answers drawn from this pool were then created: for each question, an answer was randomly picked from the set of answer to this question in the gathering phase and added to the booklet. Twenty such booklets were created, warranting a broad distribution of answers to each question.

The testing phase was run in classrooms as well. Its first part was identical to the gathering phase: after agreeing to take part in the experiment, participants were given the same booklet as in the gathering phase and had to fill it (they were not aware that there would be a second part). When all the participants had finished, they were given a second booklet which contained the same questions, each having the space for three answers: The first answer of the

participant (A1), the advice (answer of the other person: AO), and the second answer of the participant (A2). Here is an example:

In what year was the UN (United Nations) created?

Your first answer:

Precise answer: _____

Dates between which you are sure at 95% that the answer falls: _____ - _____

The answer of another student:

Precise answer: _____ 1945

Dates between which you are sure at 95% that the answer falls: 1944 - 1945

Your new answer:

Precise answer: _____

Dates between which you are sure at 95% that the answer falls: _____ - _____

Participants were told that this booklet contained the answers previously given to the same questions by a student with a background similar to theirs, they were requested to copy their answer from the first booklet to the second and then to give a second answer. Both booklets were collected. Participants were undergraduates in social sciences, again mainly doing a major in psychology (Japan, N=51; France, N=64).

Results and discussion

The first thing that needs to be checked is the similarity between the gathering phase and the experimental groups.. The accuracy, measured as the deviation of the precise answer from the correct answer, is then nearly identical in both groups; Other parameters (like interval width) were found to be nearly identical between the group of the gathering phase and the test group too, thus guaranteeing the ecological validity of the answers from the gathering phase. Since both groups' answers had the same average interval width, there should be no overall effect of the weighting heuristic by itself. Moreover since the first experiment has shown that both populations use the weighting heuristic very similarly, any difference observed in this experiment will have to be accounted for by other effects.

To evaluate the self-other effect, we have to measure the weight that participants assign to the advice relative to their first answer: weight of the advice = |A2 - A1|/|AO - A1|. If the result is 0, it means that the participant stuck with her first answer, if it is 1 that she adopted the advice entirely and if it is 0.5 that she averaged over both answers. Any result under 0.5 indicates a self-other bias – the lower the figure, the stronger the bias. The average weight assigned to the advice was 0.43 in the Japanese population, and 0.28 in the French population⁸. Both differ significantly from 0.5 (Japan: $t(51)=5.18$, $p<0.005$; France: $t(63)=117.60$, $p<0.005$), and they differ significantly from one another ($t(114)=9.89$, $p<0.005$). This means that participants in both populations tended to discount advice, but that the French

⁷ Here we dub 'advice' the answer given by the other person. Note however that it was not presented as such, but more neutrally as someone else's answer, since 'advice' might have had positive connotations that might have differed in the two populations.

⁸ This value of 0.28 is in the range of values already found in similar tasks with other Western type populations (e.g. Harvey & Fischer, 1997; Yaniv, 2004)

did so much more than the Japanese. However, taking the advice into account led to an amelioration of the accuracy (measured as the difference between the precise answer of the participant and the correct answer) in both populations with the Japanese participants gaining an average 32% in accuracy, and the French participants 24%.

This difference in self-other bias is rendered hard to interpret by the fact that the average accuracy of the Japanese participants was much lower than that of the French (Japan: 37.0 years from the correct answer; France: 17.7 years). On the one hand, inside each population the overall quality (accuracy and interval width) of the participants' first answer and of the advice was very similar. Thus in neither of the two populations had participants an objective reason to discount the advice more. On the other hand, if Japanese participants were not too confident in their knowledge regarding the specific historical questions they answered (as seem to be indicated by the large interval width they tended to give – Japan, 63.7 years; France: 28.1 years), it is also possible that the difference is purely domain specific, and would not have been found if the performances had been equal between the two populations. There is no easy way to disentangle these possibilities, so even if we can be sure that both populations displayed a self-other bias, the weakening of this effect among the Japanese participants would have to be replicated with other materials.

In order to find a potential distance effect, the range of answers was divided into three categories depending on how far the advice was from the first answer (|A1-A0|). The category 'near' represented the 25% with the minimum distance, the category 'far' the 25% with the maximum distance, and the category 'medium' the 50% in between. The distance effect would predict a stronger self-other effect (discounting of the other's opinion) as the distance increases. However we found opposite results for both populations, with the self-other bias diminishing as the distance increases (see Table 2). It should be noted that in Yaniv, 2004, experiment 2, the distance effect was observed only among the group with the higher accuracy; but even taking that into account and dividing both populations into a high accuracy and a low accuracy group, we find the same effect – namely the opposite of the distance effect. The distance effect may be much more fragile than the other effects studied here. It has not been the topic of as much empirical work as the self-other effect for example, and it is therefore possible that it is more sensitive to some variation in the materials or the procedure used. Perhaps our participants did not deem it necessary to revise their first answer if the advice was close, when a more distant advice might have motivated them to think their answer anew and perhaps doubt their initial answer. The difference in the experimental setup between our experiments and former experiments found in the literature (large groups and a paper and pencil task in our case, small groups and a computer based task for Yaniv, 1997, for example) might support this explanation: our participants may have been less motivated,

and, when confronted with an answer that was close to their own, think that their own was good enough and not go to the trouble of calculating a new answer. Here again, some further experiments testing the cases in which the distance effect – or its opposite – holds will be necessary to clarify this issue.

Table 2: Strength of the self-other effect as a function of the distance of the advice

Category	Near	Medium	Far
Japan	0.33	0.42	0.55
France	0.18	0.28	0.36

The last important aspect of the results is the use of the choosing and the averaging strategies. Regarding the choice among these two strategies, the weaker self-other bias shown by the Japanese population could have two main explanations: instead of deciding to stick with their initial answer, Japanese participants might either have averaged more, or they may have chosen to go for the advice entirely. To find out which explanation is correct, we did as in the first experiment and divided the range (from their initial answer to the advice) of the participants' second answers into 5 intervals of equal length, and the frequency of the answers falling into each of these intervals was calculated. The first part comprises the 20% of second answers that are closer to the participant's first answer and the fifth part the 20% of second answers that are closer to the advice. These two parts represent the choosing strategy. The third part includes the second answers that are between 40 % and 60%, thus representing the averaging strategy. The results (Table 3) firstly show that both populations differed in the distribution of their answers ($\chi^2(4)=76.3, p<0.005$), and they also clearly indicates that the second explanation holds: Japanese participants were not averaging more and choosing less, they were only choosing their own opinion less often and that of the other more often.

Again, this finding is rendered hard to interpret by the fact that the French participants performed much better in the task. We've seen that this might explain the difference in the self-other bias, and it is also possible that it explains the accrued tendency, among the Japanese choosers, to choose the other's answer instead of their own. On the other hand, these findings fit nicely with classical cross-cultural explanations: the Japanese population displayed a reduced self-other bias, and tended to choose the other's opinion more often, as might be predicted by, for example, the collectivist – individualist cultures distinction. At this we need some more experiments to disentangle this issue.

Table 3: Distribution of the answers in experiment 2

Part	1	2	3	4	5
Japan	38.9%	9.3%	14.3%	13.0%	24.5%
France	52.3%	15.2%	12.7%	9.1%	10.6%

General discussion and conclusion

The experiments presented in this paper aimed at checking the cross-cultural validity of some findings related to the way people integrate communicated information. The outcome of the first experiment was clear cut: French and Japanese participants were very similar in their use of the weighting heuristic. For the second experiment, the interpretation of the results is more ambiguous. Regarding the self-other effect, the only clear conclusion is that both populations displayed it. The weakening of its strength for the Japanese participants remains to be replicated. No distance effect was observed – in fact, the opposite effect was found. It is not possible with our data to give an explanation of this reversal, but it should be noted that it was not culture specific: both populations showed the same trend. Lastly, if we found some differences in the way the Japanese and the French participants used the choosing strategy – with the French using it to stick with their first answer more often – the overall pattern is the same: in both populations, the participants tended to choose more often than they averaged.

On the whole our results could thus be taken as evidence in favor of the universality of: the use of the weighing heuristic, the self-other effect and the preference for choosing over averaging. Obviously this kind of experiment would have to be replicated in many more cultures before any claim of universality could be really founded. Some explanations might also be offered for this discrepancy between our results and some previous results in cross-cultural psychology: maybe the new Japanese generation fails to reflect some of the patterns to be found among their elders for example, or perhaps different results would obtain in China. However Japan was a good case study since many works bearing on cross-cultural differences could have predicted very different outcomes. For example, we found no evidence of a preference for the ‘middle-way’ which might have showed up as an increase of the use of the averaging strategy among the Japanese participants. So we are optimistic as to what would be the results of some further replications in other cultures.

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Briley, D. A., Morris, M. W., & Simonson, I. (2000). Reasons as carriers of culture: Dynamic versus dispositional models of cultural influence on decision making. *Journal of Consumer Research*, 27, 157-178.

Harvey, N., & Fischer, I. (1997). Taking advice: Accepting help, improving judgment and sharing

responsibility. *Organizational Behavior and Human Decision Processes*, 70, 117-133.

Lehman, D. R., Chiu, C.-Y., & Schaller, M. (2004). Psychology and culture. *Annual Review of Psychology*, 55, 689-714.

Lim, J. S., & O'Connor, M. (1995). Judgmental adjustment of initial forecasts: Its effectiveness and biases. *Journal of Behavioral Decision Making*, 8, 149-168.

Lloyd, G. E. R. (1990). *Demystifying Mentalities*. Cambridge: Cambridge University Press.

Mercier, H., & Van der Henst, J.-B. (2005). *The source of beliefs in conflicting and non conflicting situations*. Paper presented at the XXVII Annual Conference of the Cognitive Science Society.

Nakamura, H. (1964/1985). *Ways of thinking of Eastern peoples: India, China, Tibet, Japan*. London: Paul Kegan International.

Nisbett, R. E., & Miyamoto, Y. (2005). The influence of culture: Holistic versus analytic perception. *Trends in Cognitive Science*, 9, 467-473.

Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108(2), 291-310.

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, 128(1), 3-72.

Peng, K., & Nisbett, R. E. (1999). Culture, dialectics and reasoning about contradiction. *American Psychologist*, 54(9), 741-754.

Soll, J. B., & Larrick, R. P. (submitted). Strategies for revising judgments.

Triandis, H. C., & Suh, E. M. (2002). Cultural influences on personality. *Annual Review of Psychology*, 53, 133-160.

Yaniv, I. (1997). Weighting and trimming: Heuristics for aggregating judgments under uncertainty. *Organizational Behavior and Human Decision Processes*, 69(3), 237-249.

Yaniv, I. (2004). Receiving other people's advice: Influence and benefit. *Organizational Behavior and Human Decision Processes*, 93, 1-13.

Yaniv, I., & Kleinberger, E. (2000). Advice taking in decision making: Egocentric discounting and reputation formation. *Organizational Behavior and Human Decision Processes*, 83, 260-281.

Yaniv, I., Yates, J. F., & Smith, J. E. K. (1991). Measures of discrimination skill in probabilistic judgment. *Psychological Bulletin*, 110, 611-617.