On-line versus memory-based orientations and self-report validity

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Abstract

A partial replication of a study by Nisbett and Bellows (1977) to which a memorization condition was added showed that subjects did not have introspective access to the determinants of their judgments, but only in the impression-formation condition. In the memorization condition, the subjects' self-reports matched the observed experimental effects. An analysis of the results showed that this was probably because the subjects' judgments in the latter condition were based on causal theories.

INTRODUCTION

A recurring debate in social psychology separates those who contest the validity of self-reports, from those who strive to prove the utility of this information gathering technique necessited by the rise of cognitivism and the decline of behaviorism. A famous experiment by Nisbett and Bellows (1977) provided undeniable evidence supporting the former group. Their study showed that people placed in a social judgment situation are experimentally influenced by some kinds of information while disregarding others. Yet when asked to state whether the information in question entered into their judgments, those same people were incapable of producing self-reports that were a true reflection of their judgment behavior. Their statements were in fact very close to those of other subjects who did not have to make any judgments and who simply have to elicit implicit theories. Nisbett and Bellows concluded that people do not have direct access to the determinants of their judgments, even if they share with others the same (though often invalid) theories when questioned about the reasons behind their judgments. In the same vein, Dubois and Le Poultier (1991) showed that teachers who had just evaluated a pupil and had claimed in their verbal reports that they have not paid attention to an internality questionnaire filled out by this pupil were precisely the ones who exhibited the strongest bias in favor of the internal pupils (see Dubois, 1994). Inversely, the teachers who said they had strongly relied on the internality questionnaire did not differentiate the internal and external pupils in their judgments. However, one can question the generality of this lack of introspective insight. In a recent study similar to the Dubois and Le Poultier experiment, Pansu (1995) noted on the contrary that business executives who were subjects to an internality bias favoring a given job applicant were the ones who said they had considered the applicant's answers on an internality questionnaire, while others showed no bias in favor of internal applicants. It is hypothesized here that the reliability of self-reports (or as Nisbett and Bellows (1977) termed it, a judging person's access to the determinants of his/her judgment), depends at least in part on the cognitive orientation adopted during information processing. One can indeed wonder what process in the Nisbett and Bellows or Dubois and Le Poultier subjects could have caused them to be unaware of the true impact on their judgments of certain pieces of information. Here is one possible model of this process: subjects learn about information I1, and on the basis of that information, make an inference that leads to an implicit, intermediate judgment, J1. They may at this point remember J1 without necessarily keeping I1 in working memory. Then suppose I2, a new piece of information related to J1, leads to another implicit judgment J2 before process, subjects questioned about the impact of I1 and I2 would have to retrieve an entire chain of intermediate judgments based on information that was not stored in working memory (dissociation of memory and judgment). This is a very complex task, and we can see why it is more economical for subjects to

appeal to a "theory" of how a given piece of information might affect their judgments.

We are dealing here with an on-line process (Hastie and Park, 1986; Hastie and Pennington, 1989), often characteristic of an impression-formation orientation. Imagine a subject who takes the opposite, memory-based orientation and thereby stores the greatest possible amount of information in working memory and does not allocate cognitive resources to making intermediate inferences. When the subject is asked in the end to make a judgment and to give a verbal report about the determinants of that judgment, there are at least two reasons why the self-report will be more reliable. One theoretically simple reason is related to the *availability in memory of causal information:* the introspection is easier in this case because judgments will be based on information that is still available (assuming that subjects follow the instructions) and can therefore be associated to the judgments. The second, theoretically more demanding reason is based on the *applicability of causal theories:* when implicit and poorly controlled inferences like the ones found in the on-line proceess are lacking, the theories subjects have about the causal value of a piece of information can in fact drive their memory-based judgments (see intelligence ratings in Nisbett and Bellows).

The study described below was designed to test these conjectures. It is a partial replication of the Nisbett and Bellows experiment in which instructions were used to induce an on-line orientation (impression formation) and a memory-based orientation (memorization). The self-reports were expected to be more reliable in the memorization condition. In addition, the hypothesized applicability of causal theories led us to predict that self-reports would exhibit the same tendencies in the two conditions, and that the self-reports and the actual experimental effects would match in the memorization condition.

METHOD

Subjects.

Ninety-six male and female business management students participated.

Procedure.

The procedure was identical to the one used by Nisbett and Bellows (1977). Subjects divided into groups of 8 or 10 were given the application file of a woman seeking employment as a social worker. The file was similar in content to the one given to the Nisbett and Bellows subjects. It contained various pieces

of information, three of which were manipulated experimentally (the independent variables): the applicant's academic record (I1: present vs. absent), the fact that she had spilled coffee on the personal director's desk (I2: present vs. absent), and the fact that she had been the victim of a serious car accident (I3: present vs. absent). A file without these three pieces of information had already been tested on a pre-test, which showed that the remaining information was neutral and therefore did not give any indication of the applicant's merits. Half of the subjects were given impression-formation instructions and half were given memorization instructions (independent variable called orientation here). The impression-formation instructions said, " You are going to put yourself in the shoes of a human resources director hiring new personnel. You should form an overall impression of the applicant." The memorization instructions said, "Your task will consist of trying to remember as many details as you can. We are going to ask you for a detailed and accurate picture of the applicant, not an overall, vague impression". After studying the file, the subjects had to make four judgments (on scales ranging from – 8 to + 8): how nice the applicant was, how intelligent she was, how flexible she was, and how sensitive she was to other people's problems (all subjects made these judgments, hereafter called person judgments or PJs). An index assesing the experimental effects was calculated for each of the four PJs by taking the mean PJ of all subjects exposed to a given piece of information, and subtracting the mean PJ of all subjects not exposed to that piece of information. Then, for each of the three pieces of information manipulated, the subjects who had seen that information (50%) had to indicate on a scale (ranging from – 3 to + 3) how much effect that information had had on each of the four PJs. This gave us a second set of four dependent variables, hereafter called introspective judgments. The set of combinations of the three pieces of information and the four PJs made, in the two conditions (impression formation and memorization), a total of twelve *actual experimental effects* and twelve *introspective (or reported) effects*.

RESULTS

Correlations between the twelve actual effects and the twelve introspective effects

A correlation analysis on the actual versus introspective effects (see table 1) pointed out four important findings: (1) In line with Nisbett and Bellows, subjects in the impression-formation condition reported introspective effects that were not linked to the experimental effects (the correlations were weak and

nonsignificant)[1]; (2) in contrast, memorization-condition subjects reported introspective effects that were almost completely consistent with the experimental effects (r = 0.97); (3) the introspective effects reported by subjects in the two conditions were quite consistent (r = 0.85); and (4) the experimental effects in the memorization condition were highly correlated with the introspective effects reported by subjects in the impression-formation condition (r = 0.85).

Insert table 1 about here

Analysis of variance on actual effects and introspective effects

The two types of effects were tested using a 2 (orientations) × 2 (I1: present versus absent) × 2 (I2: present versus absent) × 2 (I3: present versusabsent) × 4 (judgments with repeated measures) ANOVA. As a whole, the expected effects were observed. Moreover, a number of effects were a testimony to the effectiveness of the manipulations. In this brief note, we shall only report the effects related to the issue under discussion here. They support the results of the correlation study. The following effects were observed.

Actual effects.

There was no main effect of orientation, which means that as a whole, the information had neither more nor less effect in the impression-formation condition than in the memorization condition. However, there were some interesting simple effects in the orientation-by-information interaction, which showed that a given piece of information had a different impact under impression formation than it did under memorization. A case in point is the accident information, whose effect on judgments (particularly judgments about the applicant's sensitivity to other people's problems) differed across conditions ($F(1,80) = 2.67$; $p = 0.10$), with a simple effect of the condition (difference between memorization and impression formation) whenever the accident information was given ($F(1,80) = 4.06$, $p < 0.05$). In line with Nisbett and Bellows' hypothesis, subjects in the impression-formation condition were inclined to penalize the applicant who had been in the car accident (the subjects in the memorization condition found her to be more sensitive to the problems of others ($m = 5.2$), which is in line with naive public theories. Similarly, the spilled-coffee information had a significant effect in the impression formation

[1] As in the Nisbett and Bellows data, the subjects' introspective reports of how the applicant's academic record had affected their judgments about her intelligence were quite consistent with the actual experimental effects. Because no correlation could be established for one of the PJs (6 subjects), no further statements can be made.

but not in the memorization condition (interaction: $F(1,80) = 4.35$; $p < 0.05$). Impression-formation subjects had a greater tendency to consider the awkward applicant to be nice ($m = 5.1$ versus 4.3) and more sensitive ($m = 5.2$ versus 4.4).

Introspective effects.

The ANOVA on the introspective effects yielded the opposite response pattern: there were no simple effects involving the condition, since the introspective effects all exhibited the same tendencies in the two conditions. In other words, impression-formation and memorization subjects had the same theories about their judgments. On the other hand, there was a main condition effect ($F(1,138) = 4.44$; $p < 0.04$). Subjects in the memorization condition reported having paid more attention to the information than subjects in the impression-formation condition (m = 2.2 under memorization and 1.3 under impression formation).

DISCUSSION

This study has two particularly interesting results to offer. First, the Nisbett and Bellows findings were replicated, but only in the impression-formation condition. Indeed, the reports of the subjects in the memorization condition were much more consistent with the actual effects on their judgments than those of the impression-formation subjects. Second, this correlation is compatible with the causal theory hypothesis: all subjects, including the impression-formation ones (who had to make up for their introspective difficulties), based their judgments on causal theories. There was indeed a strong correlation, not only between the actual and introspective effects in the memorization condition, but also between the introspective effects in the two conditions (and by transitivity, between the introspective effects in the impression-formation condition and the actual effects in the memorization condition).

Considered jointly, these two findings provide a clear support for the stronger of the two conjectures made in the introduction (applicability of causal theories), namely, that judgments are controlled by causal theories whenever— as was probably the case in the memorization condition— spontaneous inferences are not drawn from the data. Apparently, subjects could rely on causal theories to make final judgments from that information. Note that certain determinants claimed by social psychologists to govern judgments, no longer played a part here (for instance, the "just world" effect (Lerner, 1971) that would penalize the applicant with the accident; or the impact of a social blunder on niceness, Aronson, Willerman, and Floyd, 1966)). These determinants did play a

role in the impression-formation condition, however, which suggests that their impact is linked to an on-line process like the one probably at play in many of the determinants described in social cognition.

From the standpoint of professional practices in person evaluation, this does not mean that the subjects' causal theories are valid. Nevertheless, the fact that we were able to set up situations in which they actually did orient judgments leads us to contemplate the possibility of designing devices that would modify those theories to increase their validity.

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Table 1. Correlations (Bravais-Pierson's *r*) between actual effects and reported effects in a social judgment task with memorization instructions or impression-formation instructions.

		Memorization		Impression formation	
		Actual effects	Introspective effects	Actual effects	Introspective effects
Memorization	Actual effects		.97 **	- .02	.85 **
	Introspective effects			.10	.85 **
Impression formation	Actual effects				.25
	Introspective effects				

** $p < 0.01$ (n = 12)