

A Theory of How Rumours Arise

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Introduction and issues

As it happens, we are quite well aware of the origin of a group belief. For instance, the history of baseball in the USA is a kind of contemporary myth whose origin, however, is not mysterious. In the US there is a place called the Hall of Fame dedicated to the great figures in baseball history. The spot can be found in Cooperstown, a small American town in the middle of New York state, that is otherwise totally unremarkable. Why was a building put up there to celebrate the sport that is so emblematic of the United States? Simply because the famous baseball is supposed to have been invented there by one Abner Doubleday in 1839. The date is precise but the myth of origins associated with it is no less so. In the early 19th century Doubleday is alleged to have interrupted some children playing marbles behind the shop belonging to the town's tailor. Then he is supposed to have started to teach them the rules of a new, more exciting game which he had just invented (if we adhere to this myth of origins) and which he proposed to call 'baseball'. So he marked out a small-scale field on the ground: the first game of this typically American sport could now begin.

That is the story of the myth. But all the sport's historians are in agreement that this version of the facts is pure fantasy. Indeed we know that in 1907 A. G. Mills chaired a committee which had undertaken to discover its origins and was composed of prominent men, some of whom had been presidents of the national league. Among them was A. G. Spalding, on whose initiative the committee had been formed. Oral evidence and archives were examined but nothing conclusive was found, nothing capable of elucidating the mystery of origins, till Spalding brought in a letter from a Denver mining engineer, Abner Graves, which related the myth of the invention of baseball by Doubleday in Cooperstown without offering any other argument. The committee could only judge the proof somewhat weak, but along with everyone else they agreed to say that baseball had definitely been invented in the United States, and so a myth was born. In actual fact there was no fixed origin to

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the sport; specialists agree that, in the form we know now, it emerged in an obscure process of evolution from several English outdoor ball games. The myth was created to satisfy the purposes of national identity, and also to express a common aversion in thinking for explanatory models with several causes. The myth of baseball presents the sport as if it had an essence and thus a single origin.

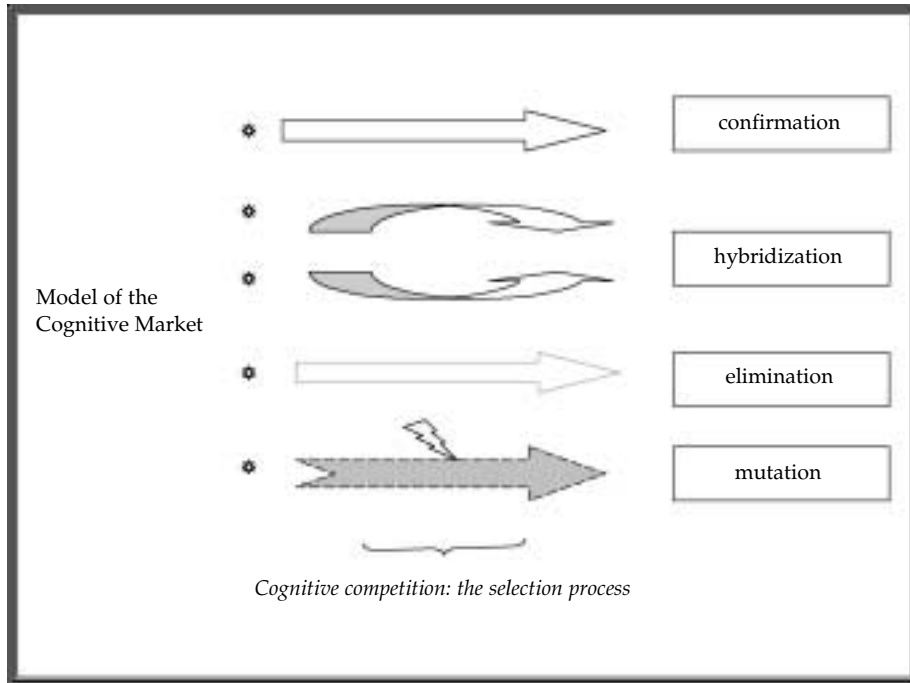
The reasons why the true origins of baseball are still obscure are very similar to the ones that complicate the job of researchers when they focus on the emergence of a belief in general and a rumour in particular on to the cognitive market.¹ Indeed they then know that collective belief only in its fully constituted form, but little about how it was constituted. So they may mistakenly assume, like A. G. Spalding, that it has a single origin without seeing that it may have gone through successive transformations, amputations, hybridization with competing or complementary, etc., beliefs.

We are beginning to get to know a number of things about what could be called *the statics of beliefs*,² that is, the way they are ordered hierarchically and rendered more or less coherent and how they protect themselves when they come up against reality that disproves them. We know much less about the issue of the *dynamics of beliefs*:³ how they change, how they disappear. And we know almost nothing about how beliefs are generated,⁴ that is, their process of appearance on the cognitive market. This is true in particular for the phenomenon of rumour,⁵ on which I focus in this paper.

Why does a rumour arise, what is its emerging process like, how does it gain a certain stability?

Experts⁶ in this area are almost unanimous in pointing out that rumours have a social purpose, they reveal something about our shared questions and anxieties, they are a kind of group metalanguage. This theory would probably be overstated if it were generalized, but it is true that in their developed form rumours assume, if not always a function, at least often a social effectiveness. And so, if we refer to the old maxim which says that the function gives rise to the organ, we might consider the enigma of how rumours arise resolved: the birth of a rumour must flow from the fact that it has a *social purpose*, it emerges when there is a felt need. But this observation moves the enigma on rather than proposing to resolve it. Indeed without any other precaution the proposal contains fearsome theoretical difficulties. It postulates that generation of a belief is controlled by a *teleological causality*: since, when it has been formulated, the rumour is supposed to assume a social function, it must be that something initially made it tend in that direction. But though the teleological regime of causality is used to good effect to illuminate the actions and decisions of individuals endowed with reason, mobilizing it in the present case is rather inappropriate. In fact we must assume that beliefs have within them, from their emergence, a force that makes them tend towards what they have to become if their fate is to take on a social function.

It is a problem whose intellectual nature recalls another question which detained biologists for some time. Indeed, just as rumours are 'adapted' to their social environment, life in its astounding diversity is adapted to its own environment (predatory, protective, reproductive, feeding function, etc.). How should we explain this?



Confirmation: the belief initially appears in an operational form, it does not change appreciably.

Hybridization: two competing products merge and form a new belief.

Elimination: a product appears then disappears simply because it has ceased to be believed or because the conditions for disseminating it are not present.

Change: a product is changed by adding or subtracting one or several elements.

Figure 1. *Cognitive competition: the selection process*

The history of ideas has highlighted two emblematic figures in this biological debate: Darwin and Lamarck. The latter thought nature worked on a mysterious 'vital principle' which, for instance, made the giraffe's neck get longer from generation to generation so that it could serve a basic biological function: getting food. We know Darwin suggested a solution to the adaptation of morphologies that was far more satisfying because it was not based on any ad hoc hypothesis. In his view biological changes occurred blindly without any other intention but chance, since cruel selection lighted only on those forms able to survive, so that the observer might have the illusion, as Lamarck did, that the amazing adaptation of living things was the consequence of a mysterious teleological force. That illusion lasted only as long as people were unable to reconstruct the process of life's emergence and change.

Intellectually that is where we are with the question of rumour.

Two virtual hypotheses offer themselves to resolve the enigma of the social effectiveness of rumour. In spirit the first corresponds to Lamarckism in biology. It holds that semantic objects tend towards a social function that ensures their genesis, their survival, and thus their spread, a role that Jean-Baptiste de Monet, chevalier de Lamarck, attributed to a mysterious vital force which directed biological evolution. However, the second is a 'Darwinian' position.⁷ It says that it is because a process occurs at a moment when the observer registers the emerging form of an idea, and less 'adapted' ones were eliminated, that dominant objects may create the illusion that from their origin they were tending towards a social function. In other words, several beliefs may arise about the same object; these beliefs do not appear totally fortuitously since the human imagination is limited and partially structured, but at least they are not directed a priori towards a social function. Then they are like products offered on a market, exposed to competition. So selection does its work, some disappear, others 'survive'. At this stage formulations have not yet come to maturity and several processes are possible that may change them, as indicated in Figure 1.

The experiments

In order to achieve greater understanding of how the selection process might occur in the cognitive market I carried out three experiments which attempt to describe the kind of cognitive groping⁸ that precedes the emergence of certain rumours. But to do this I focused on only one of the three situations⁹ that Kapferer (1995: 140) considers favourable to the emergence of rumour: where ambiguous occurrences create an unsatisfied demand for answers.

In the first two experiments the aim was to provide volunteers, alone or in a group, with statements outlining a puzzling situation.¹⁰ Interviews were then carried out during which subjects were asked to suggest one or several possible solutions to the riddle. The situation discussed in the one-to-one or group interviews was not invented, it had really happened in the past and had given rise to a rumour.¹¹ A third experiment offered subjects a list of around 15 solutions to the enigma and measured the memory's effort of selection. The three experiments will be described in detail below, but to explain their purpose I should say that three criteria for analysing content, based on fundamental research on the topic, went into the protocol. These three criteria claim, *in the first approach*, to simulate the selection process in the cognitive market and, as we shall see (by varying individual/collective, contextual/non-contextual factors), the social environment.

The three selection criteria in the cognitive market were:

- The criterion of **evocation** which corresponds to the ease with which individuals, alone or in a group, *call up* this or that scenario. Here I follow the research in psychology on social representations. I needed to take account of both the spontaneity with which a narrative appeared in the discourse (noting the order in which scenarios were mentioned) and the recurrence of the topic in the interview.¹² Here I was relying on the fact that the stronger a narrative's evocation

factor the more likely its appearance on the cognitive market. Of course once the narrative is formulated nothing guarantees that it will gain acceptance. The criterion of evocation will be noted in the text and the graphics by the acronym IPC (i.e. 'Indice Prototypique et Catégoriel').

- This is why I selected another criterion, **credibility**. It expressed individuals' subjective evaluation of the credibility of the various scenarios mentioned, assuming that the strength of their conviction had something to do with the nature of the arguments underlying the narratives. Here I was following the tradition of Boudon in cognitive sociology.
- And finally a third criterion was selected, **recall**, which had to do with the cognitive effect produced in the mind by the scenarios. On this point I was relying on some of the research in cognitive anthropology.

The first experiment: the one-to-one interviews

A total of 144 interviews were carried out¹³ one-to-one with 72 men and 72 women. Half the interviewees were given a statement briefly describing events from the first puzzle, and the other half another statement from which all contextual details (time, place, nature of the people involved) had been eliminated. In other words each subject was faced with a puzzle with *or* without context. After recording all the solutions thought up by a respondent, they were asked to choose the one they found most credible.

The basic hypothesis underlying the experiment I am presenting here is that the scenarios that may emerge when faced with a riddle, and will perhaps soon become beliefs, are probably continually renewable, but are also, as regards their 'structures', the schemata supporting them, their underlying arguments, connected to a limited logical space. Here the hope is to mark out that logical space while noting that the context, which will be measured, is an important factor in the variation between the scenarios.

The 13th district of Paris and hiding the dead

This is the statement of the puzzle,¹⁴ with and without context, which was the basis for the first batch of interviews:

Contextualized statement

Normally about 100 deaths a year are recorded for a population of 10,000. But in the 1980s it was noticed that in the Chinese quarter in the 13th district of Paris, which has around 10,000 inhabitants, there were only two or three deaths a year. How could this discrepancy be explained?

Uncontextualized statement

Normally about 100 deaths a year on average are recorded for a population of 10,000. But it was noticed that in a particular neighbourhood of city X, a neighbourhood with 10,000 inhabitants, there were only two or three deaths a year. How could this discrepancy be explained?

These events, which were absolutely genuine,¹⁵ gave rise to a remarkable belief in 1980s Paris which made it possible to solve the riddle credibly by using a solution that was likely to strike a chord at a period when the topic of immigration was an issue in many debates. It went like this: *People don't register deaths in that community so that they can re-use their ID. Bodies are taken to neighbouring countries (Holland, Belgium) and buried anonymously. That is how it is possible, and profitable, to bring in new immigrants who are 'true fake' illegals. The ID is sold to enable a new batch of cheap workers to get in.*

The scenario and the argument at the root of that belief appear acceptable and even convincing, yet, save for very few exceptions,¹⁶ they have no connection with reality. They appear in the form of the following syllogism.

1. *In a population of 10,000 about 100 deaths a year are recorded.*
2. *In the population of the 13th district fewer than a dozen deaths a year are recorded.*
3. *There are deaths in the community that are not registered.*

Where is the defect in the argument here? In the initial comparison. Indeed predicting the number of deaths in two different communities assumes they are comparable, for instance in their age structure. It is the phrase *all things being equal* that has been forgotten. Because the first premise ignores the words '*on average*'. In fact it is only *on average* that around 100 deaths are recorded in a population of 10,000. Depending on that population's demographic structure, for example, the figure may vary considerably. And the Asian community in question was characterized by a large number of young children and young men in general. Therefore the demographic situation was not comparable with the French population, which was ageing. Consequently it was not at all surprising that there should be a lower death rate in the community.

The results

(a) General results

The results show no noteworthy difference between men and women both in the number of scenarios thought up (men 5.12; women 5.08) and in the spontaneous way they were suggested and the credibility that was accorded them.

However, the presence or otherwise of context in the statement altered the relationship between the different mental attitudes expressed via the scenarios.

Before I come to this, we should note by way of introduction that the average number of scenarios mentioned by individual subjects was 5.11. On this point the difference between the interviews with and without context was not conclusive even if we can detect marginally that context seemed slightly to inhibit imagination, since the average number of scenarios mentioned in the uncontextualized interviews was a whisker below 5.

One of the most remarkable points at this level of analysis is that most of the time (in 90% of cases) individuals mention monocausal scenarios. They are quite ready to think up several, but they are disconnected from each other. There is a minimum level of mental gymnastics involved in imagining that an effect may be produced by two simultaneous causes. Some authors, such as Fischhoff (1984) or Nisbet and Ross (1980), have already stressed, though very differently, the attraction for minds of monocausal explanations.

(b) Strategies of inversion and separation

A first typology of the scenarios thought up by the respondents to solve the riddle was carried out on the basis of a random sample from 30 interviews; it shows up 15 types of scenarios, some of which are fairly similar.

1. Healthy lifestyle: In this scenario people are supposed to have longer life expectancy because they eat better, do not smoke, do not drink, etc.
2. Demography 1: This scenario offers the correct solution, the death rate is low in that neighbourhood because the inhabitants are younger than the average for the city.
3. Demography 2: The symmetrical idea is offered here since it is assumed that the elderly leave the area before they die (for example, they go back to China).
4. Separation argument: see below.
5. Medical infrastructure: the death rate is low in the neighbourhood because the inhabitants benefit from a better medical service.
6. Environmental safety 1: the neighbourhood concerned is particularly protected naturally. It should be noted that this scenario is often combined with the reverse scenario since the narratives frequently mention the fact that this neighbourhood with a low death rate may have been spared by a flood that affected the rest of the city.
7. Environmental safety 2: the neighbourhood concerned is protected from insecurity created by people (crime, road accidents if the area is pedestrianized).
8. Reversal: see below.
9. Psychological state: the area's population is assumed to have better mental hygiene, be less anxious, less depressed.
10. Disappearance of the dead: This is the scenario that spread around Paris in the 1980s.
11. False statistics: Here the genuine nature of the statistics supplied by the statement, the calculations, is simply contested.

12. Social position: A well-off population who would have better life expectancy was thought to live in the neighbourhood.
13. Gender: there were more women living in the area and they have longer life expectancy.
14. Religion–culture: the area’s population had a culture, a religion that promoted longer life (for instance, it required old people to be looked after properly).
15. Other: the few scenarios falling outside the preceding typology come into this group.

Some of these scenarios were sensitive to the contextualized statement, and among them two especially so: the ones that use a manipulation resulting in oversimplification of the puzzle (scenarios 4 and 8).

In the graphic of Figure 2 it can be seen that the presence of these two scenarios (by the criterion of evocation) relies heavily on lack of context: with context they tend to disappear.

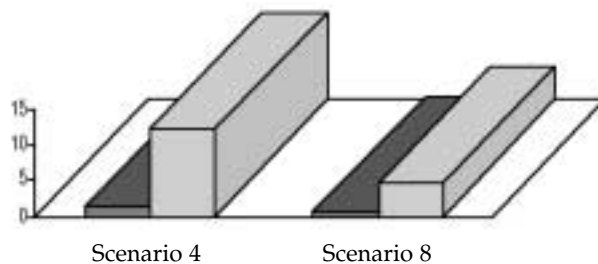


Figure 2. Scenarios 4 and 8 with and without context

Scenario 4 is concerned with separation. Contrary to what the statement says, people imagine that the area in which the death rate is lower is separated in time or space from the one where it is normal. For instance, some people explain that the low mortality neighbourhood is in a western country while the quarter where 100 people in 10,000 die on average is in a poorer country. Urban/rural and past/present divisions are also suggested to help to solve the mystery.

As for scenario 8, it proposes a reversal of the problem. Whereas the statement says that the death rate of 100 in 10,000 is normal, some respondents think this is excessive but see the low mortality of the mystery neighbourhood as normal. So then they have to explain, not why there are on average fewer deaths there, but why there are more elsewhere. Some talked, for example, of a natural disaster that may have spared the low-mortality area. It seems it is easier to work out what may cut life short than what may prolong it.

Scenarios 4 and 8 were nearly always hybridized with others since they do not in themselves constitute a solution to the puzzle, but only a position that assists in solving it. The appearance of context in the statement almost rules out using them

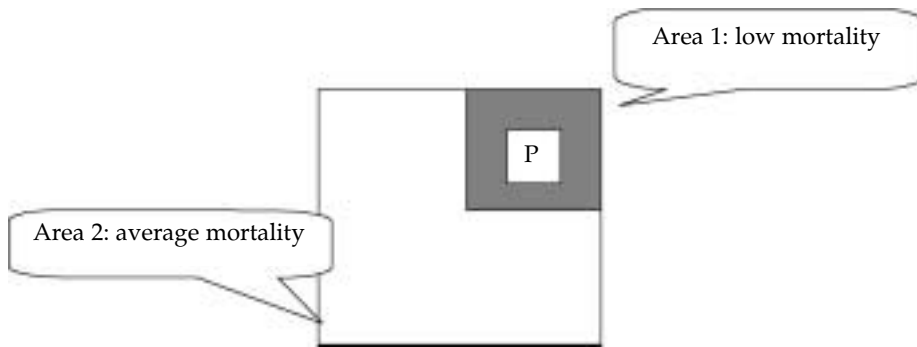


Figure 3. Homogeneous and heterogeneous areas

insofar as it says the events take place in Paris in the Chinese quarter and so using the separation and reversal schemes becomes dangerous, even for dishonest minds. Thus selection takes place and these scenarios disappear.

Reducing the typology down

The 13 other types of scenario can be reduced to a simplified typology that goes beyond story-telling and reveals the mental stances the stories imply. For readers to understand me I need to go back to the problem in its stylized form.

In fact the puzzle implies an issue of *heterogeneity*. It asks why, in a homogeneous space, one area shows heterogeneous characteristics, in other words why one neighbourhood in a city has a lower mortality. In a simplified form the riddle appears in Figure 3, with three categories that can be mobilized to solve the puzzle.

Area 2 represents the rest of the city, Area 1 the neighbourhood where the death rate is low and P the Area 1 population.

So scenario 4 is a strategy that dissociates Areas 1 and 2, which the statement does not allow, and its difficulty is made even more explicit when context is given. As for scenario 8, it indicates that the mind is focused on Area 2 rather than Area 1, which also runs counter to the puzzle statement.

The simplified typology I referred to above enables us to reduce the scenarios to four simple mental positions, described below and summarized in Table 1.

The *first* involves *external causes*: in it we find all the scenarios that try to explain the low death rate in Area 1 by features of the area that come to affect the people. For example, in the area there are said to be better medical facilities, which would mean that the wounded and sick are more easily treated; or some mention the possibility that the neighbourhood is pedestrianized and the inhabitants are not often exposed to unsafe road conditions, etc.

The *second* involves *internal causes*. It includes all the scenarios that attempt to explain Area 1's low mortality by characteristics of the population living there. For

example, the population concerned is socially superior to other areas, it eats better, has a better lifestyle, is more resistant to stress for cultural reasons, etc.

The *third* can be called *hermeneutic*:¹⁷ under this label we group together all the scenarios that contest the truth of the statistics given in the puzzle statement and think they are concealing something that has to be guessed at. The scenario arising from this position is the one to do with the disappearing dead: Area 1's population makes the dead disappear and does not register them for various reasons, with the consequence that it is incorrectly believed that fewer people die there than elsewhere.

The *fourth* position can be called *structural explanation* because in it are included the scenarios that analyse the population structure of Area 1 in terms of gender or age group in an attempt to solve the puzzle as given. Scenario 2 for instance considers life expectancy is better in Area 1 because young people have settled there, whereas scenario 3, linked to the foregoing, thinks it is because the old leave the area. Scenario 13, which occurs much less often, says it is an area where there are more women than men living and that because women have a longer life expectancy than men this might explain the low death rate.

Table 1. Scenarios classified by their explanatory schema

	External Causes	Internal Causes	Hermeneutic Solution	Structural Explanation
Scenarios	5, 6, 7	1, 9, 12, 14	10, 11	2, 3, 13

The criterion of evocation (IPC) allows us to indicate something of the initial relationship of salience between the cognitive stances, while Figure 4 shows that, faced with this puzzle of 'heterogeneity', internal explanations are more numerous in what people say. I also think the credibility graphic of Figure 5 provides some interesting information.

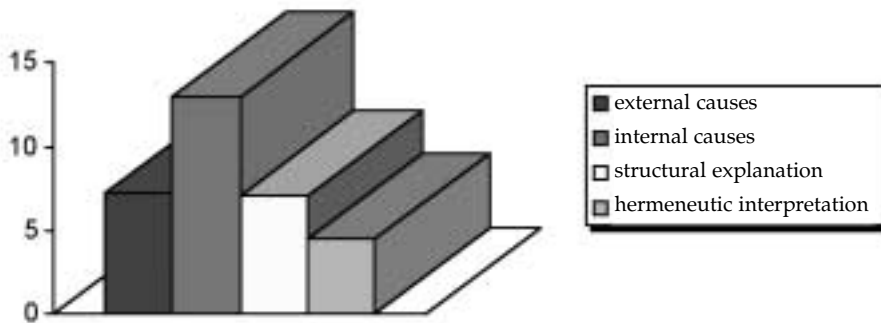


Figure 4. Puzzle 1: IPC by cognitive position

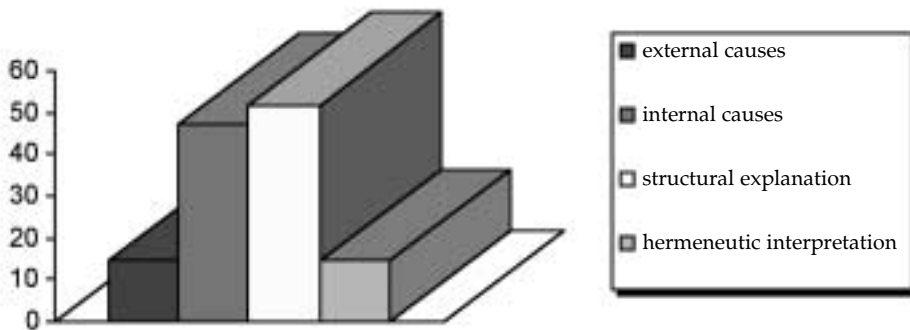


Figure 5. Puzzle 1: credibility of cognitive positions

As we see, structural causes, which were quite low numerically for the IPC in Figure 4, exceed all others as regards the credibility factor in Figure 5. Within the heterogeneity issue this structural position seems on average to give greater cognitive satisfaction, which may be interpreted in terms of procedural rationality. Indeed some cognitive products, such as structural causes here, will be more satisfactory than others but will not necessarily be most frequently mentioned if the mental effort to discover them is too onerous. Explanation by structural causes is less simple, less spontaneous than external explanations, for example, but when they are mentioned they have a kind of revelatory effect that often attracts the interviewee's adherence. In fact in 65% of cases, when the structural cause is mentioned, it is also the one that is chosen as the most credible, which is true for only about 30% of cases for internal causes (half as many). To understand these figures we should remember that the internal position is more often mentioned than structural causes.

Results with and without context

We note that in some cases there is a wide variation in the scenarios' salience in what people say according to whether the context is given or not. In fact the scenarios vary in groups by whether they are associated with this or that mental position (which justifies *a posteriori* the groupings carried out). In general we see that absence of context tends to sharpen the imagination and the utterances, which had already been suggested by the average number of scenarios mentioned per individual. As we see in Figure 6, the IPC indices are greater without context.

One exception is the hermeneutic stance. The scenario of the disappearance of the dead is the one that benefits most from contextualization in the statement, since it tends to focus the mind on the ethnic-cultural features of active stereotypes (ethnic ones in this case). This is why, on the other hand, the position that suffers most from contextualization is the explanation by external causes. This is true for the IPC,

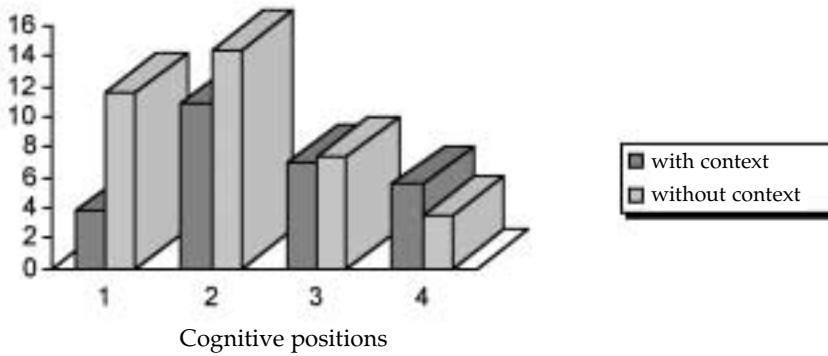


Figure 6. Puzzle 1: IPC with and without context

where this type of explanation moves from second place without context to bottom with context, and also for credibility, where it literally collapses and goes to bottom place by a big margin. Mention of the population’s national specificity makes it less satisfactory, from the cognitive viewpoint, to categorize by Area 1, that is, the social space where heterogeneity is visible. So it is not surprising to note the strength of the internal position for the IPC criterion. It moves ahead of the others in all areas immediately the context is given.

However, it loses its dominant position in assessment of credibility when respondents are faced with the uncontextualized puzzle. As we can see in Figure 7, it is then the structural position that comes out top, which was already apparent in the general results.

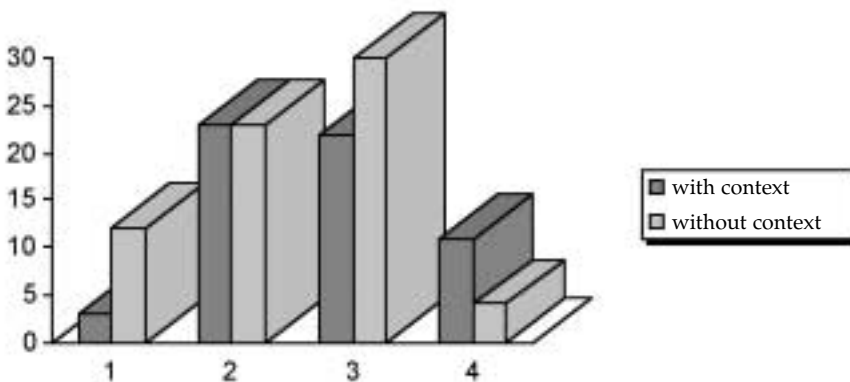


Figure 7. Puzzle 1: credibility with and without context

The group interviews

Alongside this research I wanted to see what influence group thinking might have on solving this puzzle.¹⁸ Would the group be more imaginative than the individual? Would the relationship between the different mental stances be altered? And on what criteria (credibility, spontaneity, recurrence)?

The following protocol was chosen to answer these questions. In the same way as for the one-to-one interviews, a group of four people was given the riddle of the death rate in the 13th district. The interview did not begin till each person said they understood the terms of the problem. Then a conversation started up between the subjects where the interviewer used the usual interview techniques to stimulate individual expression while at the same time encouraging debate. He noted down scenarios in the order they arose. Then, when he was sure no one had any more solutions to the riddle to suggest, he set up a discussion on the credibility of each scenario, asking, for instance: 'If you had to bet on one of the solutions you've suggested, which would you choose?'

Once the conversation was over, he asked the four participants to vote anonymously in order to get their opinion. This process of anonymous voting after free exchange was adopted to allow both the influence of the different arguments to operate *and* private convictions to be expressed.

A variety of information was thus collected: number and type of scenarios mentioned, the order in which this occurred and their credibility.

Some groups (30) were offered the contextualized puzzle, others (30) the one without context. In all, 60 groups were questioned (240 individuals). As the variable of gender had had no noticeable impact in the one-to-one interviews, it was set aside. However a dispersion criterion was included: the average age of the groups should be above 35, and they should be made up of individuals with different occupations. Furthermore, when some people in the group being interviewed already knew each other, this was noted on the interview sheet.

After these remarks on method, the first observation is that, under the conditions of this protocol, people in a group (of four) are more imaginative than individuals alone. This is not surprising but one could just as well have expected the opposite result in that the group may inhibit speech. That was not the case, whether people knew each other or not. Indeed in some cases the subjects in the experiment were good friends or simply acquaintances, in others they had never met.

Results of group interviews

The number of scenarios mentioned per group interview was 7 on average, whereas for the one-to-one interviews it was 5.11. As for the one-to-one interviews we find a difference between the contextualized interviews and those without context. Indeed context seems slightly to inhibit imagination here too: 6.3 scenarios on average were mentioned with the contextualized puzzle, while there were 7.7 without context.

We might hypothesize that the detail of the context restricts the field of the possible in our imagination. On that basis it may be tempting to assume that in a social

situation, that is, with a real context, the tendency is increased and the number of scenarios thought up reduces further.

Evocation factor (IPC) in group interviews

In a similar way to the one-to-one interviews the IPC was considered as a pointer to the ability of the scenarios to be mentioned by individuals (as I have noted earlier, this includes both the recurrence and the order of appearance of the scenarios in what people say). In the case of the IPC, if we compare the results of the group and the one-to-one interviews (see Figure 8), it is striking to find that overall the relationships of salience between the scenarios vary very little.

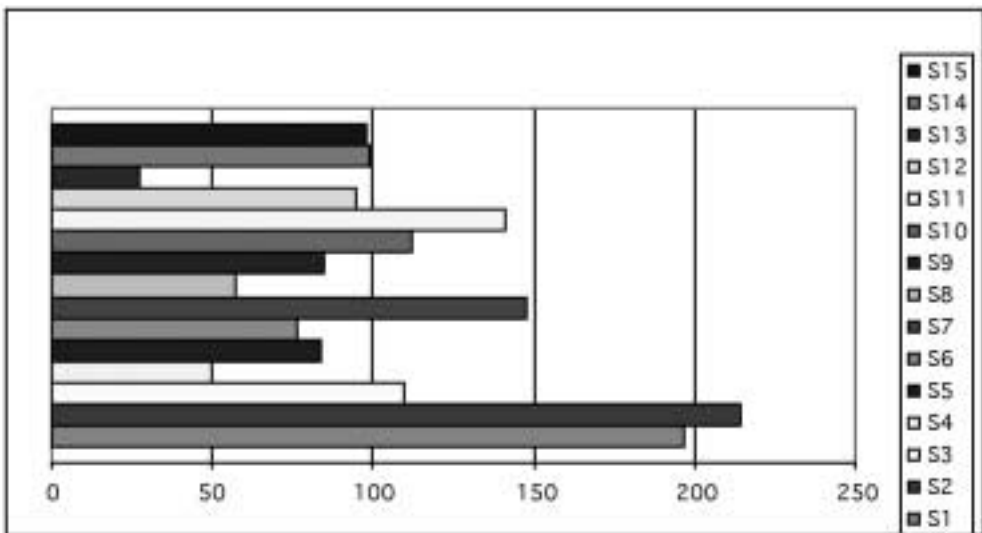


Figure 8. Puzzle 1: IPC and group interviews

Nevertheless there are several things worth noting. First of all, we find a dramatic collapse for scenario 4. Like number 8 this scenario offers a simplistic solution to the riddle based on an erroneous interpretation of the statement. In the one-to-one interviews this solution had been very popular, finishing up with the leaders among the scenarios mentioned. This was not at all the case for the group interviews, as if four people together paid greater attention to the statement and possible errors of interpretation. Probably diffuse social sanction and the presence of others, inhibited spontaneous recourse to that kind of scenario. Scenario 8 also dropped back but less dramatically, which is explicable in that it is based on an error that is more subtle, less visible. This point is not trivial since it emphasizes the fact that both the existence

of a context for the statement and hearing it in a group perform a selection among the possible scenarios.

There are two other noteworthy points:

- First we find subjects mentioning, more often and more spontaneously than in the one-to-one interviews, scenarios 2 and 3, which are 'structural' explanations. In particular, scenario 2 (which is the correct solution to the puzzle) is mentioned most, whereas it was only second in the one-to-one interviews.
- Second, we see a rise for scenario 10 (disappearance of the dead), which corresponds to the belief that did the rounds in Paris in the 1980s. This salience was subsequently confirmed and became one of the notable pieces of information emerging from the results of this second experiment

When we compare these scenarios with the cognitive positions they are matched with (Figure 9), the differences between one-to-one and group disappear almost completely. We can just see a slight rise for structural causes, which outrun external causes by a short head, whereas they came close on their heels in the one-to-one interviews.

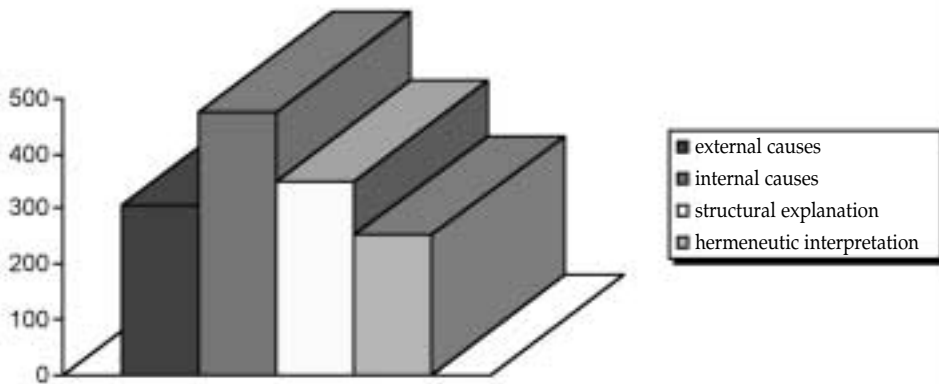


Figure 9. Puzzle 1: mention of scenarios compared with cognitive positions (group interviews)

And so, in this puzzle of heterogeneity, internal causes remain the most readily mentioned.

With and without context

In the group interviews we observe the same phenomena as in the one-to-one interviews. As we can see from Figure 10, context considerably weakens the 'external' type of scenario in the same way as it increases the frequency of mention of 'hermeneutic' scenarios, which double in number. If we look more closely, we can

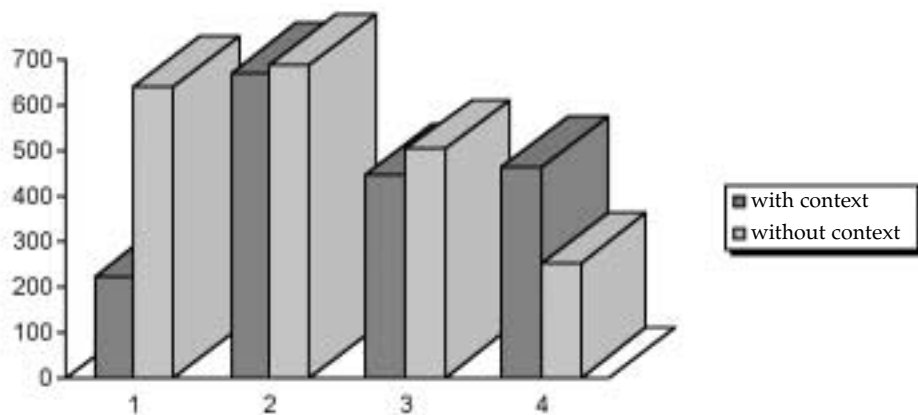


Figure 10. Puzzle 1: mentions with and without context (group interviews)

even see that scenario 10 rises by more than four times when the context is given. A similar phenomenon, though far less marked, was observed in the one-to-one interviews.

This point is important because it is confirmed with the credibility factor. *It is as if the stereotype emerged more clearly in a group than individually.* In fact, this relationship between the use of stereotyping and group discussion has already been pointed out by Argote, Seabright and Dyer (1986).

Credibility factor

As far as credibility is concerned, however, we find marked differences from the one-to-one interviews. Indeed structural causes come first, as they do in the one-to-one interviews, but are much further ahead of internal causes, and this is especially noteworthy when the latter are only placed third, after hermeneutic explanations, which move up quite a way compared with the one-to-one interviews (see Figure 11).

For credibility, scenario 10 lands in second place after scenario 2, just as it ended up in second place for the criterion 'mentions with context'. Furthermore it is far ahead when context is given. This is a remarkable fact which confirms what was said a little earlier.

Group discussion, therefore, has an important influence on the results; not only does it promote the emergence of the scenario to do with the disappearance of the dead when the context is given, but it also makes it the most readily convincing story.

Without context the order of the four cognitive positions remains the same as for the one-to-one interviews, but with context it is changed. The 'hermeneutic' scenarios are way out in front, whereas in the one-to-one interviews they were in third

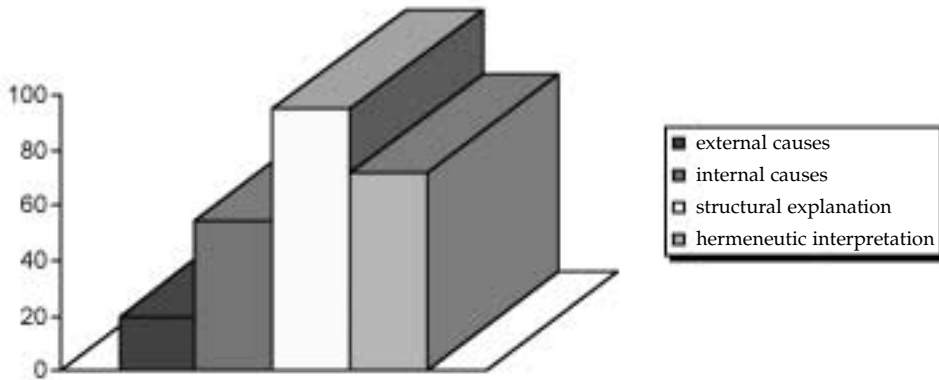


Figure 11. Puzzle 1: credibility of cognitive positions (group interviews)

place. Uncontextualized, scenario 10, and the hermeneutic stance in general, slips back quite a way, but the latter still stays neck-and-neck with the ‘internal’ type of scenario, whereas it ended up last in the one-to-one interviews.

The results of the group interviews are rather disconcerting. Four people together may have more imagination than one alone, but it seems *both* that they get closer to the truth (we see this in the increase in scores for mentions and credibility of the ‘structural’ position and in particular scenario 2 in the group interviews) *and* that they more easily accept a scenario as fantastical as the disappearing dead. However, this slightly paradoxical result is understandable. In fact the scenario about the dead disappearing is based on an ethnic stereotype, and stereotypes often correspond to the lowest common denominator of communication. At the same time the structural explanation is more popular than in the one-to-one interviews because it increases the possibility of it being mentioned. Indeed it is more likely that this scenario will be thought up among four people than by one alone. But we saw in the one-to-one interviews that, once it was mentioned, this type of scenario had a considerable power of attraction. For this reason the ‘structural’ stance comes through in the group interviews.

And so carrying out these interviews was not without point, but I must repeat that overall the results from the one-to-one and group interviews do not diverge dramatically. Thus the group interviews simply confirm the main findings of the one-to-one interviews. However, they do show that, to obtain a good simulation of the emergence of beliefs, we need to attempt to assess the results from the one-to-one interviews together with those from the group interviews.

The recall factor

Nonetheless the one-to-one and group interviews do reveal something that is crucial, not for the emergence of a belief strictly speaking, but for its initial dissemination. In fact some stories gain currency on the cognitive market, not because they come to mind spontaneously, not because they are considered plausible, not because they can be easily conceived of by average minds, but because they are dramatic and/or they fit with our system of representation and for these reasons can be easily remembered. The recall factor may be seen as revealing the *cognitive effect* produced on minds by an item of information. And it has been used several times both in social or cognitive psychology (Slovic, Fischhoff and Lichtenstein, 1984) and in anthropology (Barrett, 1996).

The procedure chosen was as follows: subjects were presented with the puzzle *contextualized* and the different types of possible solution.¹⁹ Note-taking was not allowed. Twenty-four hours later they were asked to give all the possible solutions to the puzzle. Of course they had remembered only some of them. Two details were recorded: the scenarios remembered and the order in which they were recalled. Fifteen points were allocated to the first, fourteen to the second, etc. (on the same principle as the IPC without recurrence). Sixty subjects were questioned and remembered an average of 5.8 scenarios (Figure 12).

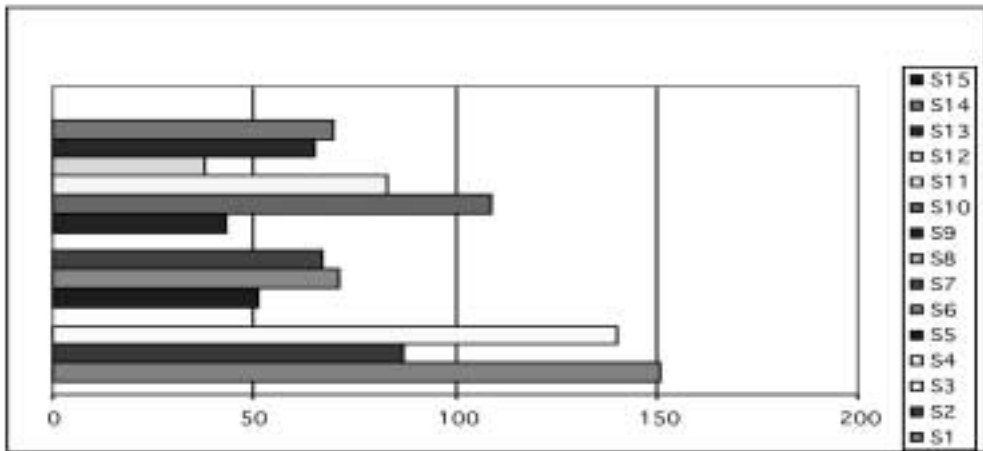


Figure 12. Puzzle 1: scenarios and recall

This memory test was carried out with contextualized statements and of course in a one-to-one situation. Therefore the only possible point of comparison with the previous results is the IPC for the one-to-one interviews with context.

Comparison of the two graphics reveals several noteworthy details. First of all, there is the fact that overall we see a narrower gap between the different scenarios in the recall interviews, which indicates a sharper competition between them.

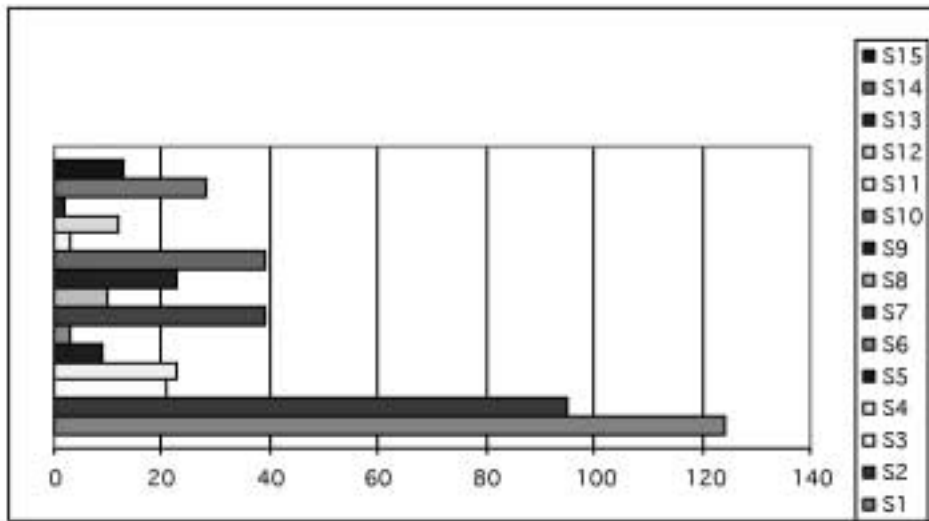


Figure 13. Puzzle 1: IPC with context (one-to-one interviews)

Then, save for the fact that the most readily mentioned scenario (scenario 1: healthy lifestyle) is also the one that is most readily recalled, we can observe changes as between the hierarchy of mention and that of recall. For example, scenario 3 – old people returning to China – which was seldom mentioned, was readily remembered.²⁰ In addition we can see scenario 10 coming up and finishing third, which is no surprise since the scenario of the dead disappearing clearly produces a cognitive effect which makes it easy to remember. Then, if we only take account of the number recalled, regardless of the order, scenario 10 comes first in a tie with 1 and 3

Discussion

What we see in these experiments is not emergence of a belief strictly speaking, but definition of possibilities for belief and of the predictable relationships between them. In fact the issue of knowing if the former has any connection with the latter remains entirely unresolved. I think it is a fertile direction even if the respective importance of the factors (evocation, credibility, recall) involved in the emergence of belief is still to be clarified.

Two types of modelling are appropriate to this simulation of emergence of a belief. The first, which is probabilistic, will not pay much attention to what happens in social reality. It considers that it is only one realization among several that might very well have come about in different circumstances. For instance, in puzzle 1 scenario 10 (the disappearing dead) came through in fact, but it could have been different. All things being equal, scenario 1 in particular was more likely to emerge

if we follow the pointer given by the three criteria chosen. Social imagination's dice, admittedly slightly loaded, decided otherwise. And history has probably retained this urban myth because it was scenario 10 that won through; it is dramatic, made a mental impact and may have amused commentators. But if, on the other hand, scenario 1 had come top, there is unlikely to have been any trace of it, nor any mention in the press or books on rumours. As a result I myself would not have chosen that riddle to carry out this *in vitro* experiment. And so the conclusion from this model is that it is impossible to do much more than assess approximately the probabilities that this or that story will arise given this or that puzzle, without ever being sure that the scenario which the three chosen factors make their favourite will eventually win out on the market.

The second type of modelling proceeds differently. Taking a much more maximalist interpretation, it starts from the hypothesis that the scenario that comes top is the one favoured by the three chosen factors. So we have to weight each of those factors to make the results match reality. It is rather artificial, but it opens up a way of thinking about a predictive model. The results of the experiment are then not used as a simulation of reality but as information about the cardinal relationships connecting, *in reality*, evocation, credibility and recall. By increasing the importance of the credibility factor, for example, or recall, results are obtained that match what happened in reality.

Several difficulties might be raised. First, the information about the puzzle given in this experiment is all secondhand: I was not in Paris in the 1980s to record what really happened. Consequently the results of the experiment are compared to events that have already passed through other researchers' or commentators' prisms. There were probably other minority beliefs on the ground that competed with the one that collective memory has retained. The traces of it that have been preserved come from the fact that a question on this point was asked in the city council and also from some articles in the press. In all likelihood no one would have asked the question if it had been assumed that the Chinese lived longer because they ate better and had a more healthy lifestyle, which does not mean that some Parisians did not think so, and maybe more of them than believed in the disappearing dead. As we see, sociologists are here faced with an *archive* or *emergence obstacle* and thus, yet again, the opaqueness of the phenomenon of how group beliefs arise. As researchers come on the scene only when beliefs have completed their crystallization process, and know only what history has preserved about this finished product, their interpretation cannot but be partial.

Secondly, the problem of temporality is a fearsome barrier to the procedure I selected. In this experiment I operated as if the three factors chosen were on the same level in the process of emergence of belief. However, things do not happen like that. Evocation precedes credibility which precedes recall; these factors are not separate, they overlap but in a certain order. As we have seen, 'evocation' and 'credibility' are on average far more selective than recall. In the memory interviews we proceeded as if subjects could be presented with all possible scenarios. But it is likely that on the cognitive market a selection would have already occurred, and so memory would have had to work on only some of them. Furthermore we may assume that an individual, faced with competing beliefs already in circulation, would not be very

keen to think up others (which limits the evocation factor). Indeed, why think up and defend solutions that compete with products offered at no cost (in imagination or mental energy invested) in order to solve effectively a puzzling situation? As we can see, the issue of temporality is especially hard to simulate *in vitro*.

Nevertheless, despite all these points, there is no reason to be pessimistic about this budding area of research. The results obtained are quite encouraging as regards a good match between what really happened and what it is possible to simulate. So we need only to remain clear-headed as to the methodological difficulties in order to attempt to get round them – why not? – or at all events to be able to assess the impact of any biases introduced.

In any case social context, and the variation resulting from it as regards the emergence of scenarios, do not go completely uncaptured by the experiment. Indeed the introduction of context into the statement on the one hand and of group discussion on the other means that we get a glimpse of the impact of social context on the variations in relationships of salience between the stories. So we can hypothesize that observing the movement between uncontextualized/contextualized statement *and* one-to-one/group interviews allows us to gain an impression of a process that will probably be amplified by the real social context.

Using the idea of prediction in sociology is highly dangerous. I readily admit that I am especially uncomfortable with the possibility, because I have always been convinced that social and mental phenomena are essentially stochastic. But stochastic does not mean without logic, with no possibility of probabilistic assessment. It is because the logical space in our imagination, be it personal or shared, is restricted, though almost infinitely renewable, that I think this working hypothesis is feasible. Do not some of humanity's answers to the great riddles presented to its consciousness – Where do we come from? Where does the universe come from? What is evil? What is there after death? etc. – offer both an immense range of possibilities and answers whose structure is strangely similar? In the face of disasters such as epidemics or earthquakes, do we not see appearing on the cognitive market types of response which may vary in their detail but are comparable in spirit? In this situation cognitive sociology's ambition appears in all its legitimacy, for in its research it tries to take account of both cognitive invariants and social variables.

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Translated from the French by Jean Burrell

Notes

1. It is an idea I defined in Bronner (2003), but to say something about it in this instance, we should note that the concept of a market is here taken in a metaphorical sense. We might say that the cognitive market is not an economic market, it does not have the same characteristics, but it shares some features with it, and this similarity justifies the use of the metaphor.

The cognitive market belongs to a family of social phenomena (of which the economic market is also a part) where individual actions converge towards emergent, stable forms of social life (without

being reified). It is a market because on it are exchanged what might be called cognitive products: hypotheses, beliefs, knowledge, etc. In the same way as for economic phenomena pure competition between cognitive products (requiring a number of criteria that are impossible to assemble: exhaustive information, etc.) does not exist. So the task for sociologists of beliefs is to describe the different characteristics of this market which have considerable influence on the spread and success of certain beliefs.

2. For example Abric's theory of the central nucleus (1989) or Doise's theory of the organizing principle (1985).
3. But see the book by various contributors under the editorship of Moliner (2001).
4. To attempt to shed some light on this matter I wrote a book about it (Bronner, 2006).
5. As we are reminded, for instance, by Kapferer (1995: 11): 'With the odd exception the researcher generally hears of its existence too late: either the rumour has died or it is in its final stage.'
6. For example Champion-Vincent and Renard (2002: 12): 'These creations are anonymous and collective because although they arise from individual innovations they are passed on and constantly reworked by the social group in which they play a functional role.'
7. It corresponds to the theory of the cognitive market that I put forward in Bronner (2003).
8. In accordance with certain suggestions from neuroscience, which considers human learning always takes place through cognitive groping, for example see Changeux (2002).
9. The only one with scope for an experimental approach.
10. In fact several puzzling situations were tried out to test the hypotheses but the space afforded by an article does not allow me to describe more than one.
11. It was established during the interview that the interviewee had never heard of the situation before. The interviews that did not meet this criterion were eliminated from the analysis.
12. What social psychologists call prototypical category analysis: it involves combining the scenario's order of appearance and its frequency in the discourse (for more details see Vergès, 1992, 1994).
13. Here I express my thanks to the 2003–4 cohort on the multidisciplinary degree, without whose material assistance this research would have been considerably weakened.
14. The interviewees read the statements a number of times and the interview did not begin until they said they understood the puzzle.
15. Thanks to J. B. Renard and V. Champion-Vincent for the details of the affair that they were kind enough to provide me with.
16. The daily paper *Libération* (01/11/83) seems to admit that some cases of fraud were proved, without going any further. Of course it is not impossible, but, as the paper explains, the phenomenon is so marginal that it cannot go very far to account for the riddle described.
17. Referring to Berthelot's schematology (1996).
18. Thanks to the 2004–5 cohort on the multidisciplinary degree at the University of Nancy 2, without whose material assistance this research would have been considerably weakened.
19. The order in which the possible scenarios were presented was random so as not to introduce bias into the experiment.
20. I found this point interesting because cognitive anthropologists focus their attention on this recall factor to think about the spread of belief. But we know that in fact it was scenario 10 that came out ahead. It seems that the recall factor alone cannot explain this. This result (which was admittedly based on a limited number of interviews: 60) backs up my choice of option for this research: taking account of several factors to simulate the emergence of a belief.

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